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ABSTRACT

The University of California Research Management Improvement Project (RMIP) was initiated to point out federal requirements and their impacts on the educational institution. The findings are contained in nine separate reports covering case flow; environmental health and safety; federal procurement requirements; financial management: budgeting and reporting under federal contracts and grants; property management; proposal preparation, negotiation and award; protection of human subjects; and time and effort reporting. Within certain limits, the nature of and the variations in these requirements among the nine major funding agencies have been analyzed. Their relationships to the systems and objectives of both the institution and the funding agency have been considered. Each of the separate reports identifies research management problems resulting from certain requirements of selected federal sponsoring agencies; assesses the impact of those requirements on the institution; and, where appropriate, recommends standardization or modifications of the federal requirements in their implementation by the agencies or by the institutions. (JMF)

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THE IMPACT OF FEDERAL REGULATIONS ON RESEARCH MANAGEMENT IN COLLEGES AND UNIVERSITIES: OVERVIEW AND SUMMARIES

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PREFACE

Description of the Project

This is a compendium of summaries of reports based on studies conducted as part of the University of California Research Management Improvement Project (RMIP) supported by a grant from the National Science Foundation. The principal investigator is John A. Perkins, Vice President--Business and Finance for the University. The co-principal investigators are Herman D. Johnson, Vice Chancellor--Financial Management for the San Diego campus and Robert F. Kerley, Vice Chancellor--Administration for the Berkeley campus.

The RMI project is composed of two major segments, with the principal research conducted in Systemwide Administration and at the Berkeley and San Diego campuses with cooperation of other campuses of the University. Project 1 has resulted in a series of reports which identify research management problems resulting from certain requirements of selected Federal sponsoring agencies; assess the impact of those requirements on the institution; and, where appropriate, recommend standardization or modification of the Federal requirements or in their implementation by the agencies or by the institutions. A separate report, Critical Issues Involved in the Review of Research Proposals at Universities, examines in more detail the research proposal review process at universities.

Project 2 includes the preparation and publication of the document: Appraising Administrative Operations: A Guide for Universities and Colleges and a study of the organization and management of a large organized research unit and its technical and administrative support systems.

Description of the Impact Studies

In conducting the research for the nine impact studies in Project 1, impact was considered in terms of the seven elements described in Appendix A. That appendix also lists the nine Federal sponsoring agencies selected for the study. These agencies comprise approximately 80% of the total Federal contract and grant activity at the University of California. Appendix B describes each of the major requirements areas considered for study and indicates the nine areas chosen for individual research projects.

The impact studies, published as separate studies, include: Cash Flow, Environmental Health and Safety, Federal Procurement Requirements, Financial Management: Budgeting and Reporting under Federal Contracts and Grants, Indirect and Direct Cost Recovery under Federal Contracts and Grants, Property Management, Proposal Preparation, Negotiation and Award, Protection of Human Subjects, and Time and Effort Reporting.

The summaries of these studies provided in this volume are preceded by an Introduction and Overview section which states some basic principles regarding the relations between universities performing Federally supported research and other projects and Federal sponsoring agencies. It draws some general conclusions from the specific conclusions contained in each of the reports, each of which addresses the requirements of an individual functional area.

About the University of California

The State of California higher education system consists of the University of California, the California State University System, and Community College complex.

The University of California, created by the State Legislature in 1869, is a statewide University system consisting of nine campuses and approximately 128,000 students. The population of the Berkeley campus is 30,000 students. Enrollment at the San Diego campus is over 9,000.

Research is an integral part of the University's function, with nearly 10% of total Federal research funds awarded to higher education being received by the University of California. The Berkeley academic staff numbers 3,839, with approximately 25% of the total engaged in research. The contract and grant awards at Berkeley averaged $53 million for the last five years. Expenditures on that campus for those five years averaged $51 million. On the San Diego campus, the academic research staff constitutes 25% of the total academic staff of approximately 1500. On that campus, contract and grant awards averaged $51 million over the past five years, with expenditures averaging $41 million over the same time period, representing the source of nearly 40% of the total expenditures of that institution.

Acknowledgements*

The quality of reports under Project 1 benefited considerably by the critical review and comments on drafts of the reports contributed by the University of Washington, Colorado State, the University of Southern California and other campuses of the University of California. In addition many persons with the University of California System were invaluable as consultants and resource persons in the research for the studies.

RMI Project Staff

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San Diego Campus: Herman D. Johnson, Co-Principal Investigator and Project Coordinator; Arthur B. Jebens, Management Consultant; Earl Z. Irvin, Researcher.

*The findings, conclusions, opinions and recommendation expressed in these summaries are those of the authors and do not necessarily reflect the views of the National Science Foundation or the University of California.

Ordering Copies of Reports

To order further copies of this or other impact studies listed herein, address orders to:

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THE IMPACT OF FEDERAL CONTRACT AND GRANT REQUIREMENTS ON RESEARCH MANAGEMENT IN COLLEGES AND UNIVERSITIES

INTRODUCTION AND OVERVIEW

The proposal that initiated the RMI project at the University of California pointed out that, "since World War II the advent of Federally supported research at institutions of higher education has had a serious effect on the administrative structure of universities" and that, "the problem has been further complicated by the wide range of requirements imposed on institutions, as a consequence of accepting Federal contracts and grants."

These Federal requirements and their impacts upon the educational institution have been the focal point of a major division of our project; our findings regarding them are contained in nine separate reports. Within certain limits, the nature of and the variations in these requirements among nine major funding agencies have been identified. Their impacts on different segments of the institution have been analyzed. Their relationships to the systems and objectives of both the institution and the funding agency have been considered. Finally, based upon the basic principles that we feel should guide and improve relationships in this area, a series of findings and recommendations have evolved with respect to the practices of the educational institutions and the funding agencies.

At the outset of the project we recognized the inherent plurality that characterizes both Federal funding agencies and educational institutions. Each Federal agency has its own systems, organic legislation and program objectives. Within individual agencies there are substantial variations among the different programs and different organizational components of that agency. Similarly, educational institutions vary widely in size, in their educational programs' objectives and in administrative and professional sophistication. From institution to institution, administrative and funding operations differ significantly and even within a single campus there are variations among large organized research units, professional schools and academic departments. Further, the administrative concerns, the professional and research staff concerns and the overall management concerns of educational institutions and of the Federal agencies are often divergent and may be in conflict. Despite these elements of plurality, there are underlying themes and principles that can be identified and areas in which significant improvement of administration by both partners can take place. Some progress in this direction has been evident through the past efforts of, for example, the Office of Management and Budget, GSA's Office of Federal Management Policy, the Department of Health, Education and Welfare and the National Science Foundation Research Management Improvement Program. Related action has been taken by the Committee on Governmental Relations of the National Association of College and University Business Officers, the American Council on Education and other educational organizations and by individual institutions. It is our hope that our studies will help point the way toward a strengthening and a focusing of this important effort.

Underlying Issues Developed by RMI Impact Studies

Perhaps the basic issue that influences Federal agency and university relationships, although it may often lie beneath the surface of day-to-day interactions, is the differing attitudes toward contract and grant programs by these financial partners. The educational institutions are requesting funds for extramural support of activities related to the objectives of higher education. They require additional sources of money to carry out the institutions' academic, research and public service program. The Federal agencies and the Congress are funding broad research program

objectives (in the case of general research funding agencies) or, more frequently, specific research projects in support of specific agency program objectives.

Ideally, it is hoped that the same funds can be used to achieve both agency and institutional objectives. In practice, there are a number of significant obstacles to the accomplishment of this result. The key to success in the effective meshing of these dual objectives centers in the details of the supporting interactions as expressed in contract and grant work statements, terms and conditions, administrative systems, audits, and program evaluations. If these do not mesh, they become the source of many of the conflicts and irritations in the relationships that adversely affect both the Federal agencies and the universities.

Research under this project highlighted a number of problem areas. Three that surfaced in most of the studies are of a broad, general character. First of all, there is a multiplicity of variations in the specifics of Federal agency requirements among different Federal agencies, different organizational components of the same agency, and different programs of the same component. This is true even though there are only three or four basically different relationships involved. The second problem lies in the administrative support systems of the institutions, such as those for cost accounting, equipment utilization, personnel and payroll, that frequently are not capable of relating effectively to both diverse agency requirements and the institution's own traditional operating needs. Finally, the agencies' concern with comprehensive audits of administrative details increasingly overshadows, in the minds of university personnel, substantive technical evaluations of research efforts and their results as the basis for evaluation of research programs in universities.

Organized Research as a Cooperative Effort

Our perspective of the problems involved in the relations between Federal sponsoring agencies and universities is founded on several premises.

First, administration of research should represent a partnership between Federal agencies and universities. DHEW stated:

> "...well over 90% of the Departments' programs are carried out in partnership with non-Federal organizations. Accomplishment of HEW's mission, therefore, involves not only its own management expertise but the management expertise and concern of thousands of grantee institutions as well."*

Second, as members of this partnership, universities and the Federal agencies both have a contractual commitment to the obligations stated in the grants and contracts and related documents. Within the institution there is a further commitment by the individual Principal Investigator to fulfill the substantive research obligations.

Third, the exercise of prudent stewardship of Federal funds by grantees is of significant concern and is a benefit to both the institution and the sponsoring agencies. Controls over grantee administration and spending should be a part of the continuum of prudent stewardship of Federal funds which begins in the agency and extends through all of the administrative services of the institution to the Principal Investigator, although the latter's primary interest, understandably, is with the substance of the research rather than with administrative stewardship. In viewing this continuum, agencies should, without sacrificing accountability, accept demonstrations of equity and prudence in the management of funds based on measurements and reasonable assumptions which do not deman a high degree of precision and detailed data to justify their use.

*DHEW-A Program for Improving the Quality of Grantee Management Vol. 1 June, 1970

Finally, the improvement of administrative relations between sponsoring agencies and educational institutions will prove mutually beneficial in terms of better research products,and of economy and effectiveness of operations.

The Central Issue

In this partnership, Federal agencies and universities share responsibility for the administration of funds used for research and other educational programs. The key issue is where the preponderant balance of administrative responsibility should be placed--with the agency or with the university. This question of where and how much responsibility should be placed has important implications for the optimum use of government expenditures on research, for the quality of research and for the status of the nation's universities as independent institutions.

Where requirements are detailed and strict, a greater degree of administrative responsibility is retained by the agency. Where requirements are general and minimal, a greater degree of responsibility falls on the university. Detailed requirements involve a government surveillance organization with many controls involving multiple financial audits; minimal requirements entail universities to assure and to demonstrate by performance that they have the administrative capabilities to discharge their obligations. Under the latter conditions, Federal agencies must rely on more general controls, on appraisals of the management capability of the institutions and evaluation of the quality of the research effort and products. Although these latter conditions are preferred by institutions, we realize that universities do not have a tradition of tight administrative control and that many do not respond satisfactorily to agreed upon external administrative requirements or even manage their own internal affairs very well. Therefore, unless the universities change, leaving responsibility to them is risky for the agencies and logically it is incumbent upon the latter to be strict in order to live up to their own responsibilities.

A Multiplicity of Systems and Points of View

As indicated earlier in this introductory statement, extramural funding of educational institutions by Federal agencies involves a pluralistic relationship. The Federal agencies should not any longer look upon the process simply as a mechanism for carrying out their short-term program responsibilities. Nor can they expect to impose the normal administrative controls which they would require if the work were done in-house or represented an end-product purchased on the competitive market. On the other hand, educational institutions cannot look upon Federal research funding merely as an additional source of money that permits them to continue or expand their same basic programs, free of any additional controls or new obligations. In fact, each contract or grant must involve the careful integration of the objectives and values of two systems, hopefully under conditions that will be productive to both and subject to a minimum of restrictions or constraints on either.

In their relationships with the private, profit-motivated segment of the society, Federal agencies must evidence concern for the general state of the economy and societal objectives. This same concern for the long-run institutional welfare, to a far greater degree, must infuse agency-institutional relationships, albeit with varying degrees of concern among different agencies, different programs and different types of funding agreements.

Each Federal agency has its own program objectives, administrative systems, traditions and external forces that shape its funding and program policies. On the other hand, universities have several purposes - teaching, public service and research. They have become significant reservoirs of knowledge, sources of new ideas and understanding, and strongholds of informed and independent judgement. They tend, however, to be relatively loosely structured, with complex internal goals and objectives, operating

under diffused management and controls, with limited flexibility, and in need of long lead-time to accommodate changes. How can these two groups work together effectively? Our project explores some of the basic principles that we hope can provide answers to these questions without significant detriment to the interests of either party.

Basic Principles

A set of principles should govern the work of the partnership. These recommended principles arise from our studies of impacts in various regulatory areas, the studies are published by this Project:

1. Federal requirements should contain the minimum amount of administrative control and detailed, precise record-keeping necessary to assure responsible, effective expenditures by grantees and contractors in light of overall relationships of the Federal agency and educational institutions.

2. A relationship between the Federal agencies and universities based on a mutual understanding of the programs and objectives of both parties should be developed through a continuing and collaborative effort to minimize the amount of agency control which has the objective of assuring responsible and effective expenditures by grantees.

3. There should be a continuing systematic effort by universities to correct the inadequacies of their institutional planning and administrative systems, based, in part, upon a program of assessment of how effective these are in carrying out their functions, particularly as they relate to Federal contract and grant operations.

4. Whenever a university has demonstrated that it is operating under effective administrative and institutional planning systems, Federal agencies should place more reliance on university administration and less reliance on their own detailed control mechanisms.

5. With regard to assuring compliance by universities with their requirements, Federal agencies should practice "management by exception". They should rely upon the effectiveness of university administrative systems that have met established standards or are under a systematic program of review. Only those institutions with a record of serious deficiencies in their ability to comply with requirements, or which have not met established standards, should be subject to detailed audit reviews.

6. The Federal auditing agencies should accelerate the trend toward auditing universities' administrative systems rather than auditing individual transactions or vouchers. Other Federal agencies should rely on the work of the Defense Contract and HEW Audit Agencies and discontinue detailed "desk" auditing on a project or transaction basis.

7. Agencies should progressively standardize requirements in certain grants and contracts management areas, working initially on basic and master agreements for all funding programs within an agency and then extending these to all, or at least comparable,groupings of Federal agencies.

Impact Report Findings

The nine separate impact reports detail instances both in the application and neglect of these basic principles. They evaluate the effects on a university of requirements in a particular area and the benefits derived from compliance. They explore methods

of achieving the benefits of a requirement while reducing the administrative costs. They identify abuses arising from either too little or too much control. It should be noted that we did not make evaluations of individual agencies' overall policies, but rather addressed their requirements in specific functional areas. Following is a very brief sampling of these findings in different requirement areas.

Cash Flow

The variety of billing requirements among Federal agencies is unnecessary and costly in terms of the time and effort required of universities in providing different forms and vouchers, on different time frames and to different levels of detail.

The delays in payment of legitimate invoices result in substantial losses which might have been earned, had there been prompt payment. Efficient cash management is important in the life of the universities.

Environmental Health and Safety

Environmental health and safety practices related to Federal contracts and grants are determined largely by requirements of Federal, State and local regulatory agencies generally applicable to educational and other institutions rather than the provisions of funding agencies or individual contracts or grants. It is assumed that the observance of these general regulatory agency requirements will more than meet the requirements of individual agencies or individual contracts and grants.

There should be an elimination or reduction of Federal funding agency requirements for health and safety as largely duplicative and ineffective except where specific safety problems exist. Consideration should be given to the treatment of health and safety by regulatory agencies and institutions as a risk management program. Academic and research personnel should be more understanding and responsive to health and safety needs; campus management should be made aware of health and safety problems and take a leadership role in their resolution; health and safety costs should be specifically funded and controlled under contract and grant operations; responsibility for health and safety considerations in research proposals should rest with the principal investigator with advance consultations with environmental health and safety staff; and agency and university cooperation is required for the development of new NIH laboratory animal policies.

Federal Procurement Requirements

In addition to examining other regulatory processes, this study compares two mechanisms for rebudgeting equipment procurement. Under the Public Health Service, authority is delegated to individual institutions to grant prior approval for equipment rebudgeting. Thus researchers can initiate and complete procurement without delay. Under NSF, the researcher must obtain approval from the agency in advance, frequently involving delay. The two procurement mechanisms have been systematically compared. Results show that the simpler Public Health Service procurement mechanism reduces administrative costs and delays, while maintaining effective and responsible stewardship.

Financial Management: Budgeting and Reporting under Federal Contracts and Grants

Federal budgetary and expenditure reporting requirements should be made more consistent and simple to provide flexibility in the use of resources to accommodate the pacing and natural direction of research.

Universities need to strive for closer coordination of all administrative components involved in the contract and grant process and for more coordinated administrative support to principal investigators and researchers.

Indirect and Direct Cost Recovery under Federal Contracts and Grants

Cost recovery policies must be developed in the context of overall Federal-university relationships, including clarification of cost sharing requirements. Federal cost recovery practices should be standardized and based on recovery of full joint costs. The audit and negotiation process leading to recovery of direct and indirect costs should be conducted by an agency independent of Federal funding agencies, with a strong staff leadership role in the Executive Office of the President. This would include determination of indirect cost rates.

Universities should improve their administrative systems, particularly for planning, management and financial control. University management is responsible to assure that adequate funds are available to departments, organized research units, and staff units to carry out their responsibilities for support and stewardship in relation to the indirect cost burdens under Federal contracts and grants.

Property Management

The need for standardization of agency practices and regulations relating to property management requirements is particularly acute. These regulations should reflect the fact of differing levels of sophistication in the property management systems of educational institutions.

An important feature of these standardized regulations would be that title to property acquired by educational institutions with contract and grant funds should normally vest in the institution upon acquisition without further restrictions regarding title, use or disposition.

Universities should in turn develop effective property utilization programs to encourage effective sharing of equipment and its optimum commitment to contract and grant objectives.

Proposal Preparation, Negotiation and Award

Experience with the use of master or basic agreements with NIH, ONR, USAF and AEC shows that they result in a significant reduction in proposal preparation, review and negotiation costs and processes.

The wide range of minor variations from agency to agency in requirements and guidelines relating to proposal application formats results in unnecessary costs and administrative burdens both to universities and to agencies.

Research proposals, increasingly must reflect, often beyond the point of reality, detailed and precise estimates of expenditures and the outlines of research methodology and results in terms of agency short-range goals.

Protection of Human Subjects

This report analyzes the benefits and costs arising from the DHEW requirements. The benefits include:

1. Protection which results from committee review;
2. Protection which results from a general campus consciousness raising;
3. The development of a group of professionals with special knowledge in protecting human subjects;

4. The development of a collection of case histories on the ethical considerations and research procedures for protecting human subjects, and

5. The protection of the university against bad public relations and legal action.

The costs include:

1. Financial costs;

2. The negative effects on research of the informed consent requirement; (in some cases, informed consent can significantly interfere with the scientific merits of a research design);

3. The threat to academic freedom;

4. The negative effects on the direction of research; (the DHEW requirements can have a chilling effect by influencing the kind of research which is pursued);

5. Delays;

6. The distraction of the researcher from his primary task.

Time and Effort Reporting

The requirements for cost distribution of direct charges for salaries and wages, to the degree of exactness required, particularly with respect to multi-source funded positions, impose costs far in excess of the benefit derived.

Although there are substantial costs arising from positive time reporting, they result as much from the University's own administrative requirements and those of the Fair Labor Standards Act as from those prescribed in grants and contracts.

General Conclusions of the Impact Studies

In each of our impact studies we reached conclusions specific to the requirements area and campus studied. These appear in the respective reports. We noted, however, several recurring themes in various combinations of the reports which lent themselves to summarization as general conclusions concerning Federal agency-educational institution partnership in contract and grant administration.

1. Federal agency requirements are very often imposed with insufficient analysis given to, or adequate understanding of, their real effectiveness in meeting agency needs and objectives, or of their impact on universities and the actual administrative processes which take place at the project level to carry out these requirements.

2. Many requirements involve a considerable bureaucratic burden without significantly improving the responsible stewardship of funds.

3. The facts that "there are legitimate differences among grantees in the procedures and practices they follow" and "that grantee organizations vary widely in their management capability - and hence their ability to exercise prudent stewardship of Federal funds"* have not been recognized by Federal agencies in the establishment and administration of requirements. The administrative systems and processes of some

*DHEW - A Program for Improving the Quality of Grantee Management Vol. 1 June, 1970

universities can provide an adequate and satisfactory response to Federal agency requirements without the necessity for detailed audits by agencies and back-up reports to them. However, we recognize that the administrative systems of other universities are not adequate and that agency requirements and surveillance must be strict until these universities strengthen their administrative operations.

4. A university must periodically review the organization and procedures of its various administrative systems and make adjustments necessary to assure itself specifically that its systems are fulfilling the responsibilities assumed by the university when it accepts Federal grants and contracts.

5. Conflict is introduced into the agency-university relationship because, on the one hand, agencies insist that universities accept administrative requirements with which universities cannot successfully comply through their normal administrative systems; while, on the other hand, universities fail to evaluate carefully their compliance capabilities and the actual costs to comply. The resulting situation exacerbates the general relationship.

Practical Assistance for Universities

One of our general conclusions above is that "a university must periodically review the organization and procedures of its various administrative systems and make adjustments necessary to assure itself specifically that these systems are fulfilling the responsibilities assumed by the university when it accepts Federal grants and contracts." In addition to the Impact Reports, our RMI Project is also producing three reports which aim to provide universities with some practical assistance to aid them in identifying and correcting administrative inadequacies.

Appraising Administrative Operations: A Guide for Universities and Colleges

This publication is based on a study of the operations and effectiveness of the University of California's Quality of Management Program. The QMP is a permanent, systematic, cyclical process of review of administrative operations. The program has been conducted for the past three years by each of the nine University campuses under a University-wide framework. Observations have been made of the effectiveness of techniques used at various campuses, and the processes and experiences that went into the conduct of the evaluations are described. The Guide assesses various techniques used in planning, conducting, implementing, and evaluating administrative appraisal reviews. Included are review guideline questionnaires for conducting evaluations of the general management of an organization, and of twelve functional areas, for example: Contract and Grant Administration; Financial Accounting; Personnel; Student Financial Assistance Administration; Registrar.

Critical Issues Involved in the Review of Research Proposals at Universities

This report discusses various facets of the campus process in relation to institutional commitments; academic plans and campus restraints; acceptability of agency terms and conditions; adequacy of the proposal budget and other considerations. Based upon research on contract and grant operations, and the impact of Federal contract and grant requirements at the Berkeley, Los Angeles and San Diego campuses, the report will help institutions identify critical responsibilities in the review and approval process.

Organization and Management of a Large Organized Research Unit within a Campus Environment - Scripps Institution of Oceanography

This report summarizes the results of a study (made in 1973) of the organization and management of Scripps Institution of Oceanography and its relationships with the University of California San Diego and evaluates some of the resulting administrative changes that have been made since that time. Specific areas to be included are: provisions for project management, budgeting and planning, contract and grant administration, funding arrangements, technical support, administrative services, data and scientific collections. Evaluation was made in 1975 and 1976.

We regard the publications described above as a corollary to our general conclusion that universities must assure themselves of the effectiveness of their administrative systems. For example, since the appraisal process described in the Guide is aimed at the actual performance of administrative systems, it has an immediate relationship to a university's ability to comply effectively with requirements; the discussion of proposal approval highlights significant points in the process where responsibility must be exercised by the university; the organized research unit study describes adjustment in organization and administration designed to more effectively respond to requirements. These are concrete demonstrations of ways to assure responsible, effective stewardship.

FUNDING OF FEDERAL CONTRACTS AND GRANTS

SUMMARY

I. Introduction

Cash flow, or the funding of contract and grant funded programs, is an integral part of the larger area encompassed within Financial Management. Three methods of Federal payment are used:

1. The letter of credit,
2. advance by Treasury check, or
3. reimbursement by Treasury check.

In recent years, Federal sources have recognized the impact of non-standardized requirements among agencies within these areas for cost reimbursement, cash advances and financial reporting requirements and have moved to implement uniform practices to relieve the burdens of compliance placed on non-profit institutions.

II. Federal Requirements

Federal requirements concerning cash flow are outlined as to:

1. Method of payment,
2. cash depository requirements, and
3. financial reporting requirements.

The proposed Federal Management Circular, FMC 75-__ "Uniform Administrative Requirements for Educational Institutions, Hospitals and Other Private Non-Profit Institutions" (popularly referred to as "A 102 1/2") contains significant recommendations for uniform agency application of requirements in the above areas.

III. Federal Agency Development of Uniformity and Simplification

Beginning with the Hystad Report (U.S. Bureau of the Budget, Report on the Project Concerning the Policies, Terms and Conditions Used for Research Projects at Educational Institutions, 1966.) several steps have been taken to simplify and consistently apply payment procedures. The proposals of the Department of Health, Education and Welfare Federal Assistance Financing System (DFAFS) and the recommendations of the Commission on Government Procurement for Regional Contract Payment Offices are outlined.

IV. University Implementing Policies and Procedures

The University of California's (the University) Accounting Manual under "Contracts and Grants: Federal Cash Advance Programs" adequately details the various Federal payment methods and indicates procedures for each.

In addition, the Chief Accountant periodically follows up on Federal accounts receivable by means of an aging schedule to ascertain the effectiveness of University claiming procedures and the magnitude of the areas of concern.

V. Impact of Requirements

The research conducted indicates that the Federal requirements concerning cash flow have significant impact on the University in several areas:

1. interest cost on the use of University working capital to fund Federal cost reimbursement research agreements, and

2. cost, and time and effort involved in conforming to non-uniform agency requirements concerning reimbursement claims, cash advances, and financial reporting.

Interest cost has been calculated at approximately $630,000 for use of University working capital based on 1973-74 data. This cost cannot be recovered under current Federal cost reimbursement policy wherein it is treated as an unallowable expense. In regard to 2. above, the University's experience is outlined and Federal comments included.

VI. Conclusions and Recommendations

Conclusions are drawn from the preceding material and recommendations made to:

The University:

1. To negotiate to add additional agencies to cash advance programs;

2. to examine systems to claim reimbursable Federal expenditures on a more current basis; and

3. to develop the true value of the funding relationship between Federal agencies and the University on a continuous basis.

The Federal agencies:

1. To implement policies outlined in the proposed circular FMC 75-__ as soon as possible;

2. to expand DFAFS to include other Federal agencies if the initial phases prove administratively feasible; to add personnel for dealing directly with reconciliation problems; and

3. to consider overlay of DFAFS with proposal for Regional Contract Payment Offices in ten Federal regions but to make latter inclusive of grants as well as contracts.

To other institutions:

A general recommendation to apply the same recommendation as those indicated for the University of California where applicable.

ENVIRONMENTAL HEALTH AND SAFETY

SUMMARY

I. FEDERAL REQUIREMENTS

The campus health and safety programs are determined overwhelmingly by the requirements of the Federal, State and local regulatory agencies rather than the specific requirements of individual Federal funding agencies. Furthermore, the campus health and safety programs are generally applicable to all campus activities and not specifically identified with contract and grant activities.

Most of the specific Federal agency requirements are limited to general references to regulatory agency or statutory requirements. The National Aeronautics and Space Administration (NASA) does require, in connection with specific contracts, the submission of health and safety plans and reports on accidents and other incidents. The other Federal agency requirements, as outlined in the report, are very general in character. None of these specific requirements have a substantive impact on health and safety programs for contract and grant research activities. The Federal, State and local regulatory requirements, however, are a determining factor in the health and safety programs.

II. UNIVERSITY OF CALIFORNIA POLICIES AND PROCEDURES

The University of California policy statements on health and safety are very brief and general in character. This situation reflects the existence of comprehensive Federal, State and local health and safety regulations and the absence of a University-wide staff officer for this function. They outline, generally, the basic health, safety, and fire protection policies, the academic departmental responsibilities for health and safety, and the responsibility of the Chancellors for review of contract and grant proposals for health and safety considerations. A 1973 Presidential task force report on the status of health and safety highlighted the need for a strengthened health and safety program particularly in view of the CAL-OSHA requirements, but if these resources were applied selectively, a fifty percent reduction of losses would be possible over a ten year period. Both the initial added costs and the long term benefits would have a significant impact on contract and grant research programs.

III. UC SAN DIEGO IMPLEMENTING PROCEDURES

The general approach taken on the UC San Diego campus in the field of health and safety is that observance of the general regulatory and advisory guidelines of Federal, State and local agencies will more than satisfy the specific requirements of Federal funding agencies. However, some of the specific Federal requirements result in an administrative burden on research operations with limited benefit to the research program. Thus, in general, the Federal, State and local health and safety requirements of the regulatory agencies rather than requirements of the Federal funding agencies determine the campus health and safety program. It is these regulatory requirements that have a significant impact on campus research programs.

The UC San Diego implementing policies in the field of health and safety are fairly general in character and reflect the provisions of University-wide requirements. Contract and grant proposals are reviewed for health and safety considerations, but no formal approvals are required. Radiation Safety Manuals have been issued for the main campus and the Medical School which set forth radiation standards and require Committee approval of all applications for use of radioisotopes. Although CAL-OSHA is applicable to the University, no campus Manual has been issued and no state inspections have been made on the UC San Diego campus. The increased health and safety expenditures that are anticipated will require increased direct and indirect charges to contract and grant funds for their proportionate share of the cam-

pus costs.

IV. IMPACT STUDIES ON THE UC SAN DIEGO CAMPUS

On the basis of a series of studies in Scripps Institute of Oceanography, the Medical School and the General Campus, the impacts of health and safety requirements on the UC San Diego campus are discussed under the following subjects:

Health and Safety Features of Contract and Grant Proposals. The campus Environmental Health and Safety Officer receives a copy of the Request for Extramural Support (RES) forms but does not normally indicate his formal approval before the proposal is forwarded to the funding agency. The procedure keeps the Environmental Health and Safety Office informed on emerging research programs but does not appear to be an effective mechanism for participation in the campus planning process for research programs nor does it fully meet University-wide requirements.

Health and Safety Programs for Animal Resources. The animal care program at UC San Diego operates under the direction of the Campus Veterinarian and the Office of Animal Resources in the Medical School and is financed through recharges. While the extensive requirements for animal care are being met, it is increasingly difficult to maintain animal care standards in view of spiraling costs. Variations in laboratory animal charges among different institutions and the three to five-fold increases in these prices in the past few years are matters of increasing concern to NIH, the principal funding agency. These costs constitute a serious threat to the maintenance of minimum health and safety standards and the quality of research.

Biohazards Program. The biohazards growing out of exposure to pathogenic microorganisms and oncogenic viruses is a matter of increasing campus concern. A special safety program and manual is being developed to meet this potential danger in advance of specific agency requirements.

Impact of Specific Federal Agency Health and Safety Requirements. The specific Federal agency requirements relating to health and safety appear to have no impact on the substantive research programs. They do, however, add to the unproductive verbiage involved in the contract and grant process and in the case of NASA contracts require preparation of health and safety plans that have little or no impact on the health and safety program of the campus. Unless there are specific health and safety problems that require special attention, such as biohazards, the imposition of such requirements as those used by NASA appear to have no benefits or justification.

Impact of Health and Safety Program on Vessel Operations. Ocean vessel operations of Scripps Institute of Oceanography present unique health and safety problems, but these appear to have been resolved. Health and safety of crews and scientists at sea for long periods of time under high risk conditions is a matter of particular concern. The National Science Foundation (NSF) and Office of Naval Research (ONR) arrange for periodic inspections of vessels through the University - National Oceanographic Laboratory System (UNOLS) particularly for vessel safety and evaluation of budget requests.

The Impact of OSHA and CAL-OSHA. The impact of OSHA and CAL-OSHA on UC San Diego research programs is only in its initial stages, but a number of corrective programs have been instituted on the campus. The role of the Environmental Health and Safety Officer is materially strengthened by the mandatory application of these regulations. The funding of OSHA costs is not normally made a direct issue in the contract and grant proposal process, but may well become a matter of increasing concern to campus management. Such a program will require more of the elements of systematic evaluation, benefits and costs analysis of alternatives, and risk management. Also, it will require close coordination and understanding between representatives of the campus and the enforcement agencies to develop immediate and long-range programs to reduce

health and safety dangers to reasonable levels within available funding.

V. RECOMMENDATIONS

Elimination or Reduction of Federal Agency Requirements

Federal funding agencies omit any references to health, safety or related insurance and workmen's compensation requirements in contracts or grants to educational institutions or limit their General Provisions to general references to applicable regulations. Exceptions should be made only with respect to those cases where specific health and safety hazards or special insurance problems are involved in the research project or program, and are not covered by existing regulations. These special situations should be identified, and specific requirements prescribed in the contract or grant documents.

Health and Safety as a Risk Management Program

Both the health and safety enforcement agencies and campus environmental health and safety offices develop a reasonable balance in the enforcement of regulations, taking into consideration such factors as the degree of risks involved, the cost outlays required, impact on research, and the degree of commitment and progress toward health and safety objectives. The academic and research departments should be equally understanding and responsive to health and safety needs in their research proposals and operations and their commitment to achieve the objectives of the health and safety programs. Management of educational institutions should be kept fully informed of health and safety conditions and the degrees of risk and cost/benefits involved. By the same token, management has a responsibility to take a leadership role in resolving areas of differences which may develop among academic research personnel, the Environmental Health and Safety Officer, and the regulatory agencies.

Funding of Increased Health and Safety Costs

Where specific health and safety considerations are involved to a substantial degree in proposed research projects, related costs should be identified in the research proposals and specific funds requested for these purposes. To cover those increased health and safety costs that have a more diffused impact on campus operations, including contract and grant research, increases should be made in the indirect cost recovery charges for the proportionate share represented by those research programs.

Health and Safety Considerations in Research Proposals

A clear campus policy should be promulgated that places primary responsibility for health and safety considerations of contract and grant proposals in the principal investigators and the academic channels of review at the department or higher level. In addition, there should be a requirement for advance consultation with the Environmental Health and Safety Officer by the principal investigator. The proposal forms should state that there has been such consultation and refer to any unresolved problems. The Environmental Health and Safety Office should be available for consultation during the proposal development process and should continue to review all proposals to keep informed on research programs and to advise management on any potential health and safety problems that may be involved and are not resolved. He should not, however, be in the formal proposal approval process. Campus planning of research and academic programs for health and safety and other management considerations should be a separate planning process rather than a by-product of the review of individual contract and grant proposals.

Agency and University Cooperation in Development of Laboratory Animal Policies

Representatives of NIH and universities with significant research programs involving use of animals should work together in the development of an acceptable basis for funding such operations based upon cost accounting methods and reflecting significant differences in administrative policies among research institutions.

FEDERAL PROCUREMENT REQUIREMENTS

S U M M A R Y

Part I

Introduction

This report is a case study based on the underlying premise that federal requirements should be as minimal as possible consistent with responsible stewardship. Within the area of federal procurement requirements, two different systems have been identified for analysis. The search is for that balance in which federal requirements are not so lenient that they permit irresponsible expenditures, nor so strict that they involve a large administrative burden without measurably improving responsible spending.

I. Procurement Rebudgeting Requirements Under the Agency Approval and Institutional Approval Systems

The two different models identified for analysis in this report are the Agency Approval system and the Institutional Approval system.

Under the Agency Approval system, the grantee must receive approval from the agency before transferring funds within approved operating categories in order to purchase research equipment.

Under the Institutional Approval system, approval authority for equipment rebudgeting has been delegated to the grantee institution. The grantee must receive approval from his institution only before rebudgeting for the procurement of research equipment.

II. Campus Processes for Equipment Procurement Rebudgeting Under the Agency Approval and Institutional Approval Systems

Under the Agency Approval system, a rebudgeting request is reviewed both within the institution and at the agency. At the same time that an internal purchase requisition is submitted to the procurement system, a letter of justification must be sent forward for agency review. Action cannot be completed until the agency review has been accomplished.

The Institutional Approval system avoids the delays of the Agency Approval system by permitting rebudgeting requests to be reviewed within the institution as the entire request package is processed, in the case of the Berkeley system, by utilizing a single form.

The impact of the latter system has been such that researchers and administrators strongly recommend that it be adopted by all federal agencies.

III. Comparison of the Impact of the Two Rebudgeting Systems

The Institutional Approval system is shown to have the following advantages over the Agency Approval system:

1. Minimization of delays;
2. Minimization of administrative work for researcher and support staff;
3. Possible improvement in the quality of research;
4. Improvement in researcher moral; and
5. Reduction in costs.

IV. Conclusions

Given a philosophy which calls for minimal requirements consistent with responsible stewardship, the Institutional Approval model is superior. The evidence presented in the paper also suggests that, in general, delegation of authority and increased reliance on the administrative control systems of institutions warrants further use.

Part 2

Introduction

Of the many federal requirements applicable to contract and grant operations, those covered in this section are considered to have been established to benefit both the government and the institution. There has been, evidently, limited efforts to measure the degree to which this goal has been achieved. And it is an underlying impression from the following surveys that in order to bring about situations lending themselves to positive results, several areas should be re-evaluated in terms of their original intent and their current status.

I. Vendor Equal Opportunity

Executive Order 11246 and the Civil Rights Act of 1964, as amended, have obligated institutions to the establishing of procurement programs which encourage and develop equal opportunity for minority suppliers to compete for university business. Policies have been issued and procedures created which permit the issuance of trial orders to test performance potential. In addition, vendors are required to certify to the existence of equal employment opportunity and non-segregated facilities.

The success of this program is such that it is considered an on-going part of the normal purchasing function and not a costly additional requirement.

II. Screening Property

The federal government makes available both the Defense Industrial Plant Equipment Center and Equipment Visibility Systems which are utilized by recipients of

contracts and grants in the attempt to locate needed equipment. Both systems require the processing of prescribed forms. It has been the experience of this campus that neither system has produced equipment to the extent needed, and most research administrators recommend that basic research oriented projects be exempted from their use.

III. Obtaining Excess Property

The GSA system, which makes available excess personal property to research institutions, is utilized to a significant extent by Berkeley campus projects. Monthly catalogs are intensively searched and, when items are found, campus procedures which incorporate the use of a single government form are carried out. This system has a long history of positive impact upon projects which, often for the price of transportation only, have been immeasurably aided.

IV. Record Keeping

Procurement documents are retained in accordance with both federal requirements and University policies. This essential function encompasses the recording of equipment acquisition by definition either as inventorial type or that to be used for special test purposes only. It has been of positive value to retain procurement files for significant periods of time, particularly with respect to the reference effort often required when disposition or title change occurs. (Note: for a related discussion of property management, see the E. Z. Irvin and A. B. Jebens report in this RMI series.)

V. Subcontract Administration

This brief survey of such a vast subject emphasizes that the Federal Procurement Regulations and the Armed Service Procurement Regulations are the base documents in this field. Significant experience has been gained within the Berkeley procurement function by years of accumulated reference to these documents. This experience has benefitted research administration because of the inclusive nature of these two policy and procedure manuals.

FINANCIAL MANAGEMENT: BUDGETING AND REPORTING UNDER FEDERAL CONTRACTS AND GRANTS

S U M M A R Y

I. INTRODUCTION

Financial management of contracts and grants is concerned with many topics related to funds received by the University from federal agencies for the support of research, training and public service programs. This study encompasses four of the central topics, consisting of:

1. Budgeting
2. Rebudgeting
3. Reporting
4. Recordkeeping

Other financial management studies conducted by this Research Management Improvement Project are: Cash Flow, Cost Recovery, Federal Procurement Requirements, Property Management, and Time and Effort Reporting.

The interrelationships among the four main subjects of this report are pervasive and crucial. Therefore, all four are studied here in a single report rather than in separate reports. Variations in the agency requirements on those subjects are a formidable array, stemming from divergent agency approaches to academically based research. Main attention is given to grants, and contracts are discussed only as they relate to special problems.

II. FEDERAL BUDGETARY REQUIREMENTS

Budgetary detail relating to Federal funds is much greater than the detail which most institutions require for their own resources. Furthermore, variations in agency requirements pertaining to budgetary matters pervade the entire process, from the preparation of the proposal budget through budget adherence and control and the rebudgeting of funds. These variations occur between agencies as well as within agencies, such as from grant to grant or among different officials of a given agency.

III. FEDERAL EXPENDITURE REPORTING REQUIREMENTS

Expenditure reporting, as a secondary control feature, is introduced when agencies require reporting by specific categories. The form and content of expenditure reports, and the frequency of submission, vary from agency to agency, dependent on assorted motivating factors.

The "Financial Status Report," which will be promulgated in forthcoming regulations, is being used by an increasing number of agencies in an attempt to achieve greater standardization. Whether or not it will accomplish its purpose will depend mainly on whether agencies maintain its basic uniformity and simplicity or alter its use by a profusion of deviations.

Documents supporting cash flow, such as the DHEW Federal Assistance Financing System, may serve a dual purpose by doubling as vehicles for obtaining cash and as reports of funds expended.

IV. IMPLEMENTATION OF REQUIREMENTS

At the University of California the implementation process for the control of budgets and expenditures is built around a sophisticated computerized accounting system which incorporates budgetary as well as financial transactions. Although this system is heavily relied upon, agencies' requirements for control and reporting of line item categories, and for unusually complex program-related reports of expenditures and estimated expenditures, also necessitate manual systems and controls which must be superimposed on the automated system.

Preparation of final expenditure reports is a cooperative effort between the Accounting Office and the Principal Investigator. For some reports it is the Principal Investigator who must supply data in highly complex financial and program related form. This poses a severe problem as project related staff often lack the accounting and analytical background for these reports.

V. IMPACT OF THE REQUIREMENTS

Application of federal requirements is inconsistent and unreasonable in its level of review, detail of justification, and severity of application and causes negative impacts on the University. Examples of these negative aspects are:

1. The artificial segmentation of research program work around budgets arranged for financial considerations rather than for programmatic needs.

2. Delay in project work and problems in scheduling caused by factors such as time required for obtaining approvals.

3. Potential disallowances and consequent costs that must be absorbed by the University when lack of clarity and consistency in requirements makes implementation extremely difficult.

4. Increased costs for manpower and related facilities resulting from stringent requirements which are difficult to implement.

The University has benefitted from the development of cost center-cost accounting information systems and professional research administrative staff. Benefits from this professionalism have carried over into other areas of administration, and therefore represent a favorable impact in this respect.

Overall, however, the writers feel that the inconsistency, complexity and lack of clarity of the requirements strain the capability of the University in implementing them properly.

VI. RECOMMENDATIONS

The Federal Agencies

Among the recommended changes in federal policies with the potential for improving the quality of research and simplifying financial management are these:

1. Use scientific program progress reports to monitor research instead of relying on financial reports and controls.

2. Provide plexibility in spending to the greatest reasonable degree, to accommodate the pacing and the natural direction of the research.

3. Standardize requirements, at the lowest possible level of detail, so long as they encourage flexibility rather than rigidity and lessen the burden on the research process and the institution. Certain portions of OMB Circular A-102 1/2 appear to have favorable potential.

4. Clarify imprecise terminology, including definitions; and use standard language, whenever possible.

5. Extend the DHEW Federal Assistance Financing System (DFAFS) to include annual reports, thereby reducing expenditure detail and individual variations among agencies.

6. Reference all requirements in handbooks and manuals back to the original or earlier sources.

The University

Although elimination of adverse Federal requirements appears to be the most beneficial avenue, institutional changes at the University, such as the following, should be explored:

1. Closer coordination of all administrative components of the contracts and grants system, especially the proposal, budget and reporting units.

2. More coordinated administrative support by campus centralized or academic units to serve directly the principal investigator and researchers.

3. Modification of University automated reporting systems, so that budget categories and expenditures are directly related and reporting periods for cash flow and expenditure reporting conform with agency demands.

SUMMARY

INDIRECT AND DIRECT COST RECOVERY UNDER FEDERAL CONTRACTS AND GRANTS

INTRODUCTION

This study of cost recovery is concerned with the process of reimbursement to colleges and universities for performance of research and training and provision of educational services under Federal contracts and grants. The study addresses basic questions of what costs does the university recover and how does it recover these costs, both direct and indirect. While the process is essentially a simple one for a single contract or grant, it has become quite complex and controversial for institutions committed to substantial Federal contract and grant operations. Subsequent sections of this report identify major factors complicating the cost recovery process, describe University of California operating procedures and experiences with cost recovery, discuss recent developments in cost recovery policy revision and make a series of recommendations that could lead to improvements in the cost recovery process for both Federal agencies and educational institutions.

The basic theme of this study is that the cost recovery process requires, 1) a reasonable level of accountability, financial planning and control by educational institutions, and 2) recognition by Federal agencies of complexities of accounting and management problems involved in carrying out large-scale contract and grant programs in a university environment.

CHAPTER 1 - FACTORS COMPLICATING THE COST RECOVERY PROCESS

1. Federal Cost Recovery Guidelines and Requirements

Federal Management Circular 73-8, Cost Principles for Educational Institutions (FMC 73-8), provides basic guidelines for cost recovery by educational institutions. The tone of the Circular is one of reasonable accountability, negotiation and compromise with wide flexibility for identifying full allocated costs, based upon open interaction between representatives of Federal agencies and institutions.

Unlike policies for profit making organizations, this Circular is based in many respects upon an incremental or byproduct rather than a full joint cost accounting approach, which places institutions at a distinct financial disadvantage.

Allowable costs, both direct and indirect, are the focus of attention of more than 90 paragraphs and subparagraphs of the Circular. Important institutional costs, such as interest on borrowed capital, are excluded completely while others are subject to limiting conditions. In addition, individual agencies and specific contract and grant requirements further limit allowable costs.

Direct and indirect costs are differentiated in general terms as to degree and ease of identity with the research project, and not by standardized definitions or the nature of the goods or services. Consistency of treatment under like circumstances is required, but this does not result in complete uniformity in treatment of similar costs, because of valid differences in institutions, administrative systems and research environment.

Indirect cost allocation and cost rates are based upon the distribution of such costs proportionately to different institutional objectives: a simple concept, but one that can become quite complex as described in the regulations and in practice, particularly under the current adversary relations with Federal audit and negotiating agencies. Various cost pooling arrangements are authorized and different approaches for cost distribution and weighting factors may be used, if determined equitable. Alternative indirect cost rates are negotiated where different environmental factors exist. The result is a complex schedule of rates applied to salaries and wages or modified total direct costs, with numerous minor variations in definitions of these bases. Indirect cost rates may be provisional, post determined, predetermined fixed, or fixed with a carry-forward feature. Most major institutions use the latter type.

The required certification that all charges are appropriate and in accordance with the agreement involves an institutional pre-audit of expenditures in the cost recovery process.

2. Indirect Cost Recovery Proposal, Audit and Negotiation Process

An indirect cost recovery rate proposal is submitted to the cognizant audit-negotiation agency, which is DHEW for over 90% of the institutions, usually on an annual basis. The rate proposal preparation and negotiation process has expanded out of all proportions in the past five years, as a result of major policy implementation differences and audit disallowances. Negotiated rates, once approved, are accepted by other Federal agencies, but rate increases may present difficult problems of implementation for the institution when applied to continuing cost-reimbursement contracts that were negotiated at a lower rate payable out of earlier year funds.

Special recharge rate proposals may be required for certain institutional services, such as the computer center or patient care costs. These negotiations often involve complex questions of differentiating leases and sales, inclusion of interest costs, reasonableness of rates and possible inequity of charges to Federal contracts and grants in relation to other users.

3. Institutional Factors Complicating Cost Recovery Process

Institutional factors complicating the cost recovery process range from academic attitudes toward planning, management and financial control processes to the nature of administrative systems and realities of carrying out a number of intermixed programs under different funding sources. In addition, indirect costs have increased substantially in recent years. A more subtle point is that direct costs are funded directly and are controlled at the departmental or organized research unit level, while indirect costs are the responsibility of intermediate and higher levels of administration. Moreover, funding of indirect costs is confused by the budgetary processes and the use of campus-wide and institutional-wide cost averages. This results in principal investigators and funding agencies seeking special indirect cost rates and being critical of indirect policies and practices.

Institutional management is required to carry out joint and intermixed program objectives funded from a wide variety of fund sources without basic working capital funds, but with expectations of a high degree of financial stability. At the same time, there is increased emphasis on accountability for each of hundreds or thousands of segmented fund sources, as well as for overall system operation.

4. Federal Agency Factors Complicating Cost Recovery Process

The very number of Federal agencies involved in funding contract and grant operations, with their variations in allowable costs and cost recovery procedures, is a major complicating factor. Different cost reporting categories and requirements for supporting data add to the problem. More fundamental problems arise out of the confused policy position and rationale for institutional cost sharing for Federal projects, and Federal agency attitudes toward responsibility for support of higher education. Also, absence of continuing, consistent and effective Executive Office leadership in cost recovery and other financial policy matters, independent of individual Federal funding agencies, makes it difficult to resolve these issues in a mutually satisfactory manner.

CHAPTER 2. UNIVERSITY OF CALIFORNIA EXPERIENCE WITH COST RECOVERY

Cost recovery operations in the University of California are centered at individual campuses, except that indirect cost recovery rate determinations, advance payments and master contract negotiations and development of administrative systems are generally responsibilities of Systemwide Administration. Direct cost recovery represents a burdensome paperwork operation for the Extramural Accounting Staff, with an emphasis on audit of individual transactions. University of California administrative systems do not accommodate direct production of expenditure reports required by the agencies, as is true in a few other institutions, nor does it permit effective financial control by complete comparison and analysis of expenditures in relation to budget and planning documents.

The University has experienced few disallowances of direct costs, but current cognizant agency audits of this and other institutions are raising numerous and substantial questions of potential disallowances. They involve controversial issues of fund expenditure transfers, time and effort reporting and certification, payments to consultants, late or early charges and related matters.

Indirect cost recovery rate proposals have been receiving increased attention in the University. The current rate proposal has been the subject of extensive audit and negotiation. Questions are being raised on a number of major issues, although the proposed rate is almost identical to that for the previous year and there has been no significant change in the research program or University environment. Final determination may well be almost a year late in its application to 1975-76.

The University shifted from a rate base of salaries and wages to modified total direct costs for fiscal year 1974-75. The change resulted in some shifts in impact on individual contracts and grants, but made no change in the total amount to be recovered. It resulted in more equitable assessment of indirect costs and avoided some of the arbitrary effects of use of salary and wage base. Although there was some initial opposition, the new rate base has operated satisfactorily.

The academic research community of the University has learned to live with direct cost recovery requirements, although there is still some evidence of opposition to and variations in observance of, time and effort reporting and other paperwork routines. Indirect costs are a different matter. There is little support for indirect cost policies and practices. This situation is aggravated by University systems of funding and financial control which do not accommodate the realities of indirect costs. Progress in changing these practices is being made, but it has not satisfied the academic community or funding agencies.

CHAPTER 3. RECENT NATIONAL DEVELOPMENTS IN COST RECOVERY POLICIES

As an outgrowth of the developments and conditions described in this report, DHEW has taken a series of steps which have had a major impact on cost recovery policies and practices. Actual or proposed disallowances are becoming widespread, cost recovery rate proposals are being given a thorough review, and a complete revision of FMC 73.8 has been proposed and circulated that incorporates fifteen major policy changes. University officials anticipate that these revisions would reduce indirect cost recovery by 40% or more, without any reduction in the indirect cost burden of the institution. They are seeking to have the matter reconsidered on a fresh basis through GSA, OMB, Congressional Committees and their own organizations.

CHAPTER 4. RECOMMENDATIONS

1. Federal-University Relationships

a. Cost Recovery Policies Must Be Developed in Context Of Overall Federal-University Relations. Any substantial modification of cost recovery policies, particularly those relating to allowable costs and indirect cost rate determinations, should be accomplished within the broader context of clarification of the basic character of Federal-university relationships in research, instruction, and public service. This includes resolution of the issue of the degree of university cost sharing for different Federal-university programs.

b. Limited Number of Federal-University Arrangements Should Be Prescribed. Federal-university relationships should be based on a premise that a limited number of alternative arrangements, from competitive procurement contracting to outright institutional, individual or project support for research, instruction and public service programs, is required and desirable. Each of these alternatives may well require different processes for applications and proposals; different terms and conditions in the agreement; different degrees of Federal support or institutional cost sharing; different policies on the degree to which indirect costs should be considered recoverable and certain direct costs considered allowable; and different audit and evaluation procedures.

c. Basic Federal Agency Requirements Should Be Standardized. Within each of the broad categories of Federal-university relationships that are established, Federal agency procedural requirements for direct cost recovery, advance payments, expenditure reporting, number of copies of reports, degree of detail for supporting documentation, close-out procedures and audit practices should be standardized. Federal emphasis should be on standardization of Federal agency practices, rather than on attempting to standardize university practices through the auditing process.

d. Application of Guidelines for Indirect Cost Recovery Should Be Flexible and Equitable, Based on Full Joint Cost Recovery for Research Programs. Effective standard guidelines for indirect cost determinations should be developed for all categories of these Federal-university arrangements. Although variations in the degree of recovery of these costs may be provided under some arrangements, full recovery of joint costs under Federal research contracts and grants should be authorized. These guidelines should recognize that indirect and direct costs cannot be forced into rigid and arbitrary definitions, but must reflect need for full identification of all indirect costs, based upon an effective joint cost accounting approach, which recognizes that cost classifications will vary under different

organization arrangements, administrative systems and management conditions. Where joint costs are involved, mutually acceptable, equitable methods of cost allocation and distribution must be developed that avoid the minutiae, cost and objections of complete time and effort reporting; detailed equipment and space utilization and inventory data; and full cost accounting systems. Rather, reliance should be placed on the use of sensitive, equitable and readily available indicators of use and costs.

e. Agency Exceptions Should Be Controlled. Individual agency and specific contract and grant exceptions to standardized procedures for these different categories of relationships should be strictly controlled. Where exceptions are made, full opportunity for appeal by educational institutions to a central staff agency for an impartial review should be permitted.

f. No Overall Cost-Sharing Percentage Limitations Should Be Imposed. No overall agency or government-wide percentage limitations on cost sharing or cost recovery should be included in legislation or administrative regulations.

g. Federal Audit and Negotiation Functions Should Not Be Responsibilities of Funding Agencies. In view of the inherent conflict of interest involved, Federal funding agencies should not perform the functions of auditing and negotiation of indirect cost recovery rates. A separate organization in the Executive Office of the President should be assigned these functions.

h. A Central Federal Staff Policy Role Required. An effective policy and leadership role on Federal-university relationships should be established in the Executive Office of the President on a continuing basis for cost recovery and indirect cost practices and related financial policies. This staff, preferably in the Office of Management and Budget, should also be responsible for handling appeals from individual agency determinations on these matters and from individual agency modifications in established standards.

2. University Administration

a. Universities Should Improve Their Administrative Systems. Universities should, where Federal contract and grant operations are significant, develop or modify their administrative systems to be more directly responsive to various standardized Federal cost recovery requirements and models.

b. Universities Should Emphasize Planning, Management and Financial Control. Greater emphasis should be placed by universities on overall planning, management and financial control of contract and grant expenditures, rather than on detailed documentation and audit of specific minor items of expenditure.

c. Indirect Costs And Cost Sharing Information Should Be Integrated Into University Administrative Systems. Indirect costs and cost sharing practices of universities should be built into budgeting and accounting systems so that reliable data can be developed on these items as an integral part of regular financial management and control systems that recognize indirect costs and cost sharing as major items of management attention.

d. Universities Should Assure That Adequate Funds Are Included in Current Campus Budgetary Allocations To Meet Appropriate Share of Indirect Cost Obligations. Universities have a responsibility to assure that adequate funds are reflected in current budgetary allocations for departments, organized research units and supporting staff offices to meet an appropriate share of indirect cost burdens. Such provisions for current budgetary allocations are required if these organizational elements of the institutions are to be able to carry out their responsibilities for support and stewardship of Federal contract and grant operations and funds.

e. Universities Should Promote Greater Understanding of Cost Recovery and Indirect Costing Policies. After universities have taken steps to improve their administrative systems and strengthen their planning, management, and financial control practices as part of their regular administrative systems, a concerted effort should be made to promote faculty understanding and observance of their responsibilities in cost recovery and indirect costing operations of universities.

PROPERTY MANAGEMENT

SUMMARY

Introduction

Property management functions for the purposes of this report include the activities performed by the University from receipt throughout its useful life to final disposition of materials, supplies and equipment acquired in connection with Federal contracts and grants. This includes property that is acquired as Government property or as University property but subject to certain reporting, use, recovery rights or other conditions imposed by the Federal Government. The acquisition and procurement of property is covered by a separate impact study report. If the property becomes University property not subject to any further Federal requirements, conditions or other restrictions, it is outside the scope of this report.

A substantial proportion of property at UC San Diego falls within the categories of Government property or of University property subject to special Federal property management requirements resulting from its being acquired in connection with Federal contracts or grants. This is true although 99% of this property will eventually become unrestricted University property or will be used exclusively by the University during the life of the property. These requirements were found to be quite burdensome on research operations in the academic departments, on the equipment management staff, and on other staff offices of the University. Their value in the accomplishment of substantive research results is very limited. Where agencies such as the National Science Foundation and the National Institutes of Health have relaxed their controls, the results have been beneficial to both the agency and the University.

Much of the detailed agency regulations and provisions of contracts and grants relating to property management reflect the wording of the Grant Act and Office of Management and Budget Circular A-101 which refer to "discretionary authority" to vest title in institutions "on such terms and conditions as the agency deems appropriate". Pending draft revisions of the Federal property management policies do not correct this situation. They appear to reflect the General Services Administration's concern with the technicalities of property management rather than with the support of research at universities.

I. SPECIFIC FEDERAL REQUIREMENTS

The specific Federal requirements relating to property management are not only voluminous but reflect a wide variation in the details of these requirements among agencies and within individual agencies for different programs and components of the agency. The extent of the variations is shown in two tabulations of Federal agency requirements when title to property vests in the University and when title vests in the Government. In the latter case, agency variations are more extensive than when title vests in the University.

The National Institutes of Health and the Environmental Protection Agency have accepted the University of California property management regulations as meeting the agency property control system requirements, and this has resulted in a substantial reduction in the administrative burden on the University.

The conditions under which property is considered nonexpendable are generally the same for Federal agencies and under the University's property management system. Whether, and at what stage of the process, title vests in the Government or the

University is determined by the terms of the contract or grant. Variations in the specific requirements for property which is under either title status are numerous. If Government property status is retained, additional requirements are involved.

The recently issued GSA regulations governing excess personal property announce a policy encouraging use of excess property in connection with contract and grants but impose a number of conditions on use and require retention of title in the Government. Agency implementing procedures have not, as yet, been issued but they present the potential for further restrictions on the universities in the management of such property. Excess Government property is not, however, a significant factor in UC San Diego research operations.

II. FEDERAL AGENCY RESIDENT REPRESENTATIVE REQUIREMENTS

Some Federal agencies assign a resident representative to institutions to provide assistance and expedite actions. Such a representative has been assigned by the Office of Naval Research to the UC San Diego campus, and he has been authorized to act as the representative of four other Federal agencies. The resident representative has been authorized to make most of the approvals required by these Federal agencies in connection with property management functions. His presence on campus has not resulted in any additional controls by the agencies.

III. UNIVERSITY OF CALIFORNIA IMPLEMENTING POLICIES AND PROCEDURES

The University of California policies provide for a uniform property management and inventory system throughout all campuses which applies to all property owned by or in custody of the University. The system is designed to satisfy the requirements of the Federal agencies as well as to meet University management needs. Primary responsibility for property management is assigned to the principal investigator and to the department assigned custody with supporting functions assigned to the Equipment Management Department.

University-wide regulations do not clarify the problem of recording title in the University nor do they outline the specifics of an effective property utilization program. Rather, the emphasis is on the mechanics of the inventory system. The major deficiencies in the inventory system are the inability to record data on funds used to acquire property if it is identified as University property and the ambiguities in the coding system used to identify equipment items. Also, the requirement to note the contract or grant number on the University decal not only represents a substantial workload, but it is not an effective substitute for having this data in the inventory system. The emphasis on this requirement tends to detract from development of an effective property utilization program.

IV. UNIVERSITY OF CALIFORNIA, SAN DIEGO IMPLEMENTING POLICIES AND PROCEDURES

The University of California, San Diego policies and procedures are essentially a repetition of the University-wide policies, but they do not resolve the deficiencies noted in the University-wide system. Also, under the UC San Diego practices, the equipment inventory system does not record the property as University property even if authorized by the terms of the contract or grant until after preparation and approval by the agency of the property reporting lists. Special provisions are made for property management responsibilities during contract and grant close-

outs and for the transfer of the property if a principal investigator transfers to another institution.

V. RELATIONSHIP OF FEDERAL PROPERTY MANAGEMENT REQUIREMENTS AND THE UNIVERSITY OF CALIFORNIA IMPLEMENTING POLICIES AND PROCEDURES

The University of California implementing policies and procedures generally parallel the Federal property management requirements. There are several areas for which no University implementing policies have been issued where Federal requirements exist or where University procedures are not as strict as agency regulations. These matters have been resolved at the campus level based on working experience with the particular agency.

In several areas, particularly the perpetual inventory system for equipment, the University system goes beyond the Federal agency requirements to meet its own management needs. On the other hand, certain Federal requirements such as restrictions on the use of property or the transfer of title would interfere with any effective property utilization program that might be developed by the University.

VI. IMPACT OF THE FEDERAL AGENCY REQUIREMENTS ON THE UNIVERSITY

The determination of the impact of Federal agency requirements on UC San Diego was based on sample studies of the academic departments, research units, the Equipment Management Department, the Accounting Office and the Contracts and Grants Office. Two statistical studies were made. The first of these indicated that of the 37,271 line items currently under inventory control, over 18% were not recorded as University property and resulted in a disproportionately larger workload on the academic departments, research units and staff offices. Furthermore, if the restrictions on the transfer of title were raised from $1,000 to $3,000 the number of equipment items subject to Federal restrictions would be reduced by 60%. This would represent a substantial savings to the Federal agencies and the universities.

The second study was an analysis of nonexpendable property acquisitions in calendar year 1972 and subsequent changes of status of these items since that time. Out of 2,201 items acquired by UC San Diego in 1972, only 3% were Government furnished, but of the items that continued to be in the inventory system as of June 30, 1974, only 34% were recorded as University property. Of the remaining two-thirds of the items that were not carried as University property, they were involved in one or more fund number changes which involved considerable paperwork.

The study revealed that the maintenance of awareness of, and compliance with, the numerous variations in Federal agency property management requirements imposed heavy workload burdens throughout the campus.

Particularly onerous was the impact of the Office of Economic Opportunity requirements that placed almost all property in the nonexpendable category subject to inventory control and retained title in the Government. Other requirements that were identified as being burdensome included:

The Identification and Decaling of Government Property
Restrictions on the Use of Government Property

- Receipts for Government Property
  Physical Inventories and Reports
  Disposition of Government Property

The study revealed that there were situations such as under the National Science Foundation contract for Deep Sea Drilling where the retention of Government property status was justified. Under this contract the University is acting as an agent for the Federal agency to carry out an agreed upon area of research and data gathering. The program operates fairly independently of other University research and is carried out on agency leased vessels and agency-funded facilities.

The proposed requirements in the draft Federal Management Circular relating to residual inventories of expendable personal property appear to be unduly restrictive particularly since potential abuses could be handled through alternative approaches that would be less burdensome on the University.

VII. RECOMMENDATIONS

On the basis of the analysis and findings of the impact study outlined in the earlier chapters of the report, this Chapter provides recommendations relative to Federal requirements, University of California policies and procedures, and educational institutions generally.

Recommendations Relating to Federal Requirements

Standardization of Property Management Requirements and Practices

Representatives of the Federal Government and the educational institutions should collaborate in the development of a basic policy and detailed statement of standardized operating procedures to be followed with respect to all aspects of property management relating to contract and grant operations.

Vesting of Title to Nonexpendable Personal Property

A key feature of the standardized Federal property management system should be that the title to property acquired by educational institutions with contract or grant funds normally vest in the institution upon acquisition without further legal title, reporting, use or disposition restrictions. This same policy should also apply to excess Government property made available to educational institutions. Exceptions to this policy whereby the Government would retain title should be based upon mutually acceptable guidelines, and the specific items of property which are to be treated as exceptions to this policy listed as part of the proposal and award process and specifically noted in the award.

Control of Expendable Personal Property

The property management requirements applicable to expendable personal property should be limited to those presently in effect under research agreements to normal budgetary, recording of expenditures, and audit procedures. The proposed requirement in the draft Federal Management Circular and the current PHS regulations relating to residual inventories of expendable personal property having a total aggregate fair market value of $500 or more should be dropped, particularly for educational institutions with procurement and property management systems meeting minimum requirements.

Use of Property

The individual agency contract and grant restrictions on the use of property acquired under Federal contract or grant operations should be eliminated. Rather, reliance should be placed upon the fact that the acquisition of the property was adequately justified initially and that a mutually acceptable property utilization program or property pooling arrangement had been adopted by the institution.

Reporting of Nonexpendable Personal Property Acquisitions

The practices of NIH and NSF of eliminating reports of the acquisition of nonexpendable personal property to the funding agency when the title vests in the educational institution should be adopted by all Federal funding agencies.

Increase in OMB Circular A-101 and Related Federal Agency Restrictions on Acquisition, Use, Disposition, and Recovery Rights of Nonexpendable Personal Property from $1,000 to $3,000

OMB Circular A-101 and related Federal agency restrictions applicable to the acquisition, use, disposition, and recovery rights of nonexpendable personal property with an acquisition cost in excess of $1,000 should be amended to increase this limitation to $3,000.

Recommendations Pertaining to University of California Policies and Procedures

Equipment Inventory Record System

The University of California equipment inventory record system should be revised to include data on the specific funds used to acquire the property, at least for the length of time that the contract or grant is active or that the specific fund number is valid. These data should be retained in the system even after the title to the property is transferred to the University of California.

Use of Project Fund Numbers

The fund numbers assigned to individual contracts and grants should be retained for the life of the project rather than be subject to change each fiscal year, particularly if the agency permits the institutions to carry forward fund balances to the next fiscal year.

Property Utilization Program

The University of California should take the lead in developing an effective property utilization program including arrangements for equipment sharing and pooling subject to recharges or reimbursement, where appropriate. The system should expand the equipment inventory data system to include information on the actual use of such equipment, specific location, title status, uniform coding nomenclature, identification of responsible custodian at the operational level, maintenance schedules, and repair information. Utilization committees made up of equipment management, technicians and academic department staff officers should be established to monitor operations of the program. An important feature of the system should be to have the system operate on a decentralized basis to accomodate the needs of individual campuses and avoid the complexities of the logistics of a centralized, multi-campus system.

University Equipment Policy on Decaling

The University of California equipment inventory policy statement requiring that the contract or grant number under which the equipment was acquired be noted on the identifying decal should be rescinded.

Recommendations Applying to Educational Institutions Generally

Other educational institutions, to the extent that it is feasible to do so, should request Federal agencies to adopt their own institutional property control systems in lieu of the more restrictive individual agency requirements; arrange to take title to nonexpendable personal property upon acquisition, and develop effective equipment utilization programs involving equipment sharing and pooling and other features suggested for the University of California system.

PROPOSAL PREPARATION, NEGOTIATION AND AWARD

I. FEDERAL AGENCY REQUIREMENTS

General Discussion

Federal agency requirements relating to proposal preparation, negotiation and award are characterized by the volume of material used to describe the requirements and the extent of minor variations agency by agency on the same basic theme. These conditions prevail despite the fact that each agency is seeking the same basic information about the proposed research.

Proposal requirements are viewed differently by the administrative personnel, by the academic researchers, and by the scientific or academic administrators. Also, they are being applied to a wide range of different types of research proposals. Even the basic terminology relating to use of the terms "contract" and "grant" has been confusing and not determinative of the nature of the relationships created between the funding agencies and the universities.

The relationship of the proposal process to the institutional commitment that eventually emerges is a matter of increasing concern not only in the proposal stage but also during the negotiation and acceptance stages. The value of master or basic agency agreements is particularly evident during these latter stages since they tend to reduce the burden of detailed administrative reviews and negotiations. Agency debriefings in connection with acceptance, or more importantly rejections, of proposals are a largely untapped source of management insights for both the agencies and the educational institutions.

Tabulation of Agency Requirements

Two tables are presented that summarize twenty-two specific requirements of nine Federal agencies involved in the proposal preparation, negotiation and award process. These tables document the wide variations in requirements among the agencies on a wide range of elements involved in the proposal process.

Specific Federal Agency Requirements

Some of the unique and potentially burdensome or otherwise significant requirements of the agencies that were identified during the course of the study involve such areas as basic information about the proposal, provisions for pre-proposal agency contacts, use of prescribed agency forms, cost sharing, budgetary information and supporting detail, contact requirements, and agency review and evaluation processes. A number of specific agency provisions are of particular significance including the step-funding of NASA, the questionable administrative requirements of EPA, and the continuing and expanding relationships between the funding agency and the institution encouraged by the Sea Grant Program of NOAA.

II. THE UNIVERSITY OF CALIFORNIA POLICIES AND PROCEDURES

Basic responsibility in the University of California system for the submission of contract and grant proposals is divided among the Board of Regents, the President of the University and the Chancellor of each campus. The overwhelming bulk of proposal activity is carried out and controlled by the individual Chancellors. Basic policy and procedures have been issued in the Policy and Procedure Manual for Contract and Grant Administration which covers such topics as academic policy, University commitment, cost recovery, cost sharing, approval of solicitation, authority to submit proposals, and acceptance of contracts and grants.

III. UC SAN DIEGO IMPLEMENTING PROCEDURES

Although UC San Diego is a relatively young campus except for the Scripps Institution of Oceanography, it had 1,643 active contracts and grants in 1973-74 representing 40% of the total expenditures for the campus from all sources. NSF, DOD, NASA, and AEC are the principal funding agencies, in the order listed, but nearly all other Federal funding agencies have been or are currently represented.

UC San Diego implementing procedures on proposal preparation and review are set forth in the Policy and Procedure Manual. All campus proposals must be processed through the Contracts and Grants Offices. Detailed procedures are prescribed for preparation and clearances before approval. A standard form has been developed for use when the agency does not use prescribed forms. Average clearance time is less than ten days although many proposals are cleared in much less time to meet agency deadlines. Negotiations are coordinated with the Office of Contracts and Grants and with the Office of the President. Acceptances are made through the Office of Contracts and Grants and involve careful review of the terms and conditions.

Different review and clearance procedures are observed in the Medical School, Scripps Institution of Oceanography, and the Main Campus with different degrees of involvement at the Departmental and Dean's or Director's levels. Selective dissemination of information relating to available funding sources and other data relating to research projects, personnel, facilities, equipment, and research program developments based on the Stanford University SCRIPT system appears to be of interest and potential value to research personnel.

IV. IMPACT STUDIES ON THE UC SAN DIEGO CAMPUS

The impact studies on the UC San Diego campus of the Federal contract and grant requirements relating to proposal preparation, negotiation and award were based on a standard set of questions addressed to administrative and research personnel in twenty academic departments or organized research units. This was supplemented by interviews and analyses in various campus staff offices involved in the proposal process. The General Campus, Medical School, and Scripps Institution of Oceanography were equally represented in the sample.

To a large degree the University requirements in connection with the proposal process are a direct reflection or implementations of Federal agency requirements. Some specific steps are introduced in the process, but they are related to the need for appropriate institutional commitment to the proposal. There are some reviews, such as those that relate to the number of research assistants being funded, which are imposed in the interests of the educational program of the University. These reviews are relatively minor in cost and impact.

A significant number of findings are set forth in the report covering such matters as:

-the commitment by staff to process proposals to meet agency and University requirements.

-the wide range of minor variations among agency requirements which do not represent an overwhelming problem to individual investigators.

-the diversity in the types of proposals submitted and research agreements that are used.

-the limited review of the substance of research proposals in the review process.

-the negative effects of agency requirements that ask for too detailed supporting data or too explicit research methods and results.

-the interrelationship of private and Governmental support in proposal development.

-the frequent neglect of technical and administrative support provisions and management needs in proposals.

-the advantages of continuing personal relationships between the principal investigator and funding agency personnel.

-the need for a selective dissemination system on funding agency announcements, campus research capabilities, and related information for investigators.

-the special management and administrative support requirements of large-scale managed applied research proposals.

-evaluations of the relationships between investigators and specific funding agencies.

-the need for specialized contract and grant assistance in the School of Medicine.

In addition to these general observations, the report discusses the issue of the impact of these requirements on research management in terms of the following factors:

Cost and Effort Information on the monetary cost and time and effort of the initial proposal preparation at the investigator level and the subsequent processing, review, negotiation and award are set forth for a number of different situations. No total dollar cost figures are available but the amount is substantial and must be considered in relation to the nearly 7,000 proposals in 1973-74 which resulted in $267 million in awards. The problems of funding this substantial cost are also outlined. Federal agencies seldom specifically fund such costs directly although they may do so indirectly.

Delays While considerable periods of time may be involved in meeting University or Federal agency requirements, the resulting delays seldom if ever result in not meeting agency deadlines. However, the 6-8-10 months or more required for agency processing does present serious problems to the University, particularly since most Federal funding is on a year-to-year basis. No relief appears to be in sight. Some of the University review requirements are discussed in detail, and the potential dangers involved in their arbitrary enforcement are highlighted.

Introduction of Conflict Some of the numerous areas of potential conflict between funding agencies and the University-academic world and between the academic and administrative staffs of the University are identified. It is also pointed out that these same areas represent opportunities for cooperation. There does not appear to be any simple, one-time solutions to these numerous potential areas of conflict, but the University, both with respect to its own internal conflicting forces and in its relationships with Federal agencies, must maintain an atmosphere of open interaction in which these problem areas can be resolved or tempered before

they accelerate to a serious level.

Academic Issues In addition to the academic issues raised in the discussion of introduction of conflict, there is the question of whether the University should gear itself to short-term mission oriented research and public service projects or limit itself to longer-term, basic research projects carried out by the individual investigator. This, in turn raises questions of academic freedom and the degree of research management required. Paralleling this issue is the potential for further division between the administrative-management concerns of the campus and the attitudes and objectives of the academic-research personnel.

Non-Standardized Requirements There is a serious problem in the divergence in agency proposal requirements on a wide-range of detailed items. The most noteworthy of these are itemized in the report. The variations are not a major source of complaint at the research level since each research unit usually works with one or two funding agencies, or where more agencies are involved, use of UC San Diego's standard proposal form minimizes the problems. While standardization is not a problem of overriding urgency, it does require attention, particularly to avoid the unreasonable requirements of new agencies and programs and unilateral changes in requirements by existing funding agencies. At the same time, recognition should be given to the need for three or four standard formats for the basically different types of proposals. Mechanisms should be developed so that the institutions have a significant voice in developing these formats and reviewing deviations by individual agencies before they are made effective

Record Keeping While both the campus and University-wide have extensive record keeping responsibilities in connection with research proposals and awards to meet agency requirements, these are carried out by the contracts and grants staffs with little involvement or impact on research management or academic departments. Increasing reliance by some Federal agencies on the contract and grant staff as the primary official channel of communication reinforces the need for an effective records system and communication with the academic departments.

V. CONCLUSIONS AND RECOMMENDATIONS

Federal Agency - Institutional Relationships

Standardized Proposal Format A series of standardized research proposal formats be developed by representatives of the Federal agencies and of selected universities for the major categories of research projects. The standard formats should avoid the specific agency requirements that have been highlighted in the report as being burdensome.

Federal Agency-University Coordination Continuing mechanisms to coordinate relationships between the higher educational institutions and the Federal funding agencies on all aspects of extramural funding should be strengthened. Particular attention should be focused on such problems as providing an effective means of controlling unilateral agency departures or innovations in contract and grant requirements; clarifying the basic character and objectives of the research funding programs with universities; providing a systematic primary channel of regulatory and advisory communication; and strengthening the central coordination role in the Executive Office of the President on these matters.

Multiple Year Funding Multiple year funding or step funding of research projects at educational institutions be encouraged as a matter of national policy to gear such research to the educational programs, academic requirements and administrative needs of the universities.

Extended Use of Basic or Master Agreements The use of basic or master agreements should be extended to cover all major Federal funding agencies supporting educational institutions with a significant number of research agreements.

Funding of Proposal Preparation Costs Federal funding agencies should recognize and make specific provision for the funding of costs of preparing research proposals for the more complex research projects preferably as direct costs subject to reimbursement or, alternatively, as an element in the indirect cost recovery computations for educational institutions.

Specific Proposal Requirement Problem Areas

Support Data Requirements for detailed support data of budget estimates be limited to major expense items (over $2,500) that depart substantially (25% or more) from normal operating levels of expenditures by the institution and are subject to reasonable and detailed forecasts.

Duplicate Budget Data The requirements for duplicate budgetary data developed for agency activity or program categories in connection with NIH, NASA, U.S. Air Force contracts and the NOAA Sea Grant Program be eliminated.

EPA Special Requirements The questions raised by the University of California and the Committee of Government Relations of NACUBO on the EPA interim grant regulations of November 27, 1971, and on provisions in subsequent research agreements relating to such matters as cost sharing, acceptance of grant conditions at the proposal stage, special time and effort reporting provisions, right of termination, changes in scope of work, provisions for property management, and insurance coverage should be resolved through cooperative negotiations.

Equipment Certification and Percent of Effort Requirements The special requirements of AEC and ONR for a certification in connection with equipment purchases and of ONR, AEC, NASA and Air Force relating to the special documentation of percentage of effort of investigators devoted to the project be eliminated, and the underlying problems of property management and time commitment to the research project be specifically identified and resolved on a broader basis.

Institutional and University of California Policies and Practices

Selective Dissemination of Research Opportunity Information and Related Data UC San Diego and other educational institutions with significant research interests develop or utilize automated selective dissemination systems for distributing announcements of research opportunities and related legislative, Congressional and agency materials from both governmental and private sources to individual members of the faculty and other research personnel. Such a system could also be expanded to exchange information within the research community of the institution on on-going research interest and capabilities, aid in the development of interdisciplinary research proposals, and provide information on the availability of special services, unique items of

equipment and specialized facilities that may be of interest to other research personnel.

Administrative-Management Considerations in the Proposal Process At the time that preliminary consideration is being given to the development of a complex research proposal, arrangements be made for active participation in the project planning process by selected campus interests to assure a balanced concern of academic-research and administrative-management interests throughout all stages of the proposal process and subsequent administration of the agreement. Research proposals that are more routine in character should have a very limited review in the department or school, the Office of the Chancellor and the Office of Contracts and Grants to assure compliance with campus policies and to identify potential problem cases. Campus planning processes should also focus attention on anticipating major developments in organized research programs and reflecting them in campus plans without reliance on review of each contract or grant proposal.

Positive Planning of Campus-Federal Agency Relationships The Office of Contracts and Grants, the Office of Graduate Studies and Research and a select group of research administrators and principal investigators make annual evaluations of campus-Federal agency relationships on research, training and other programs on both an overall and agency-by-agency basis. These evaluations should be based on such sources as individual experiences; agency announcements and regulations; informal administrative and professional contacts; library reference information; annual reports; reasons given for revision; rejection or acceptance of proposals; information on proposal evaluation methods and criteria; and results of audits and site visits. On the basis of such data, a campus strategy and contract and grant research program approach should be developed generally and for each major funding agency. This information should then be widely reviewed and communicated to the campus community for guidance in the development and negotiation of research proposals.

Training in Proposal Preparation UC San Diego and other graduate and professional schools offer formal training to junior academic and research members in the development and preparation of research proposals and of the supporting administrative data, drawing upon the experience of the senior research personnel, representatives of public and private funding agencies and selective use of available literature on proposal preparation.

Channels of Communications with Funding Agencies Emphasis be placed upon the maintenance of the official channel of communication between the campus and the funding agencies through the campus Office of Contracts and Grants. Direct informal contacts between the principal investigator and the agency technical staffs should also be encouraged, particularly on the substance of the research proposal, but the Office of Contracts and Grants should be kept informed on each development as it occurs. Only in this way will that office be able to assess the impact of changes in the proposal on the institution and to coordinate evaluation of revisions of the financial support or substance of proposals during the agency review, negotiation and acceptance stages.

*Since this report was written, a new redraft of FMC 75-___ relating to uniform administrative requirements has been received. This draft includes standard forms for applying for all types of Federal assistance and a statement of the general policy objective of consistency and uniformity in agency requirements. Unfortu-

nately, this redraft has provisions for a number of exceptions and falls considerably short of the recommendations set forth in this report. Before final issuance of the Circular, further discussions with selected university representatives along the lines suggested by this report would be helpful. There should also be a firm commitment by the funding agencies that they would use the standard forms and instructions. Any exceptions should be subject to advance negotiations with the educational institutions as well as approval by GSA.

THE DHEW REQUIREMENTS FOR THE PROTECTION OF HUMAN SUBJECTS: ANALYSIS AND IMPACT AT THE UNIVERSITY OF CALIFORNIA, BERKELEY

S U M M A R Y

I AND II. BACKGROUND AND IMPLEMENTATION OF THE REQUIREMENTS

The fundamental DHEW requirement is that no grant or contract involving human subjects will be made unless the research design has been reviewed and approved by an institutional review committee composed of research professionals. Chapters I and II of the report provide the background on this requirement and describe the Berkeley campus policy and process for implementation of the requirement.

III. IMPACT OF THE DHEW REQUIREMENTS

Benefits

The direct and indirect benefits which have been identified and analyzed at Berkeley include the following:

1. Protection which results from committee review;
2. Protection which results from a general campus consciousness raising;
3. The development of a group of professionals with special knowledge in protecting human subjects;
4. The development of a collection of case histories on the ethical considerations and research procedures for protecting human subjects; and
5. The protection of the University against bad public relations and legal action.

Costs

The direct and indirect costs identified and analyzed include the following:

1. The financial costs;
2. The negative effects on research of the informed consent requirement;
3. The threat to academic freedom;
4. The negative effects on the direction of research;

5. Delays; and

6. The distraction of the researcher from his primary task.

Other Impacts of the Requirements

The requirements created a major controversy over the concept of social risk at Berkeley. This controversy is described and analyzed.

IV. BASIC PRINCIPLES OF AN IDEAL SET OF REQUIREMENTS

This chapter discusses basic principles relevant to any further revisions in the DHEW requirements and to any new set of requirements issued by any other government agency. The principles include the following:

1. Self responsibility of the researcher;

2. Local peer group review;

3. A simple administrative procedure to clear minor risks;

4. Emphasis on the positive benefits of human subject research;

5. Minimization of the dangers of centralized control and government censorship;

6. Emphasis on the importance of academic freedom;

7. Provision for a waiver of written informed consent;

8. Avoidance of heavy additional procedures for clearing vulnerable subject experimentation;

9. Elimination of any requirement for completed institutional review before a proposal is submitted for federal funding; and

10. Provision for rotating membership on the institutional review committee.

V. IMPROVEMENT IN THE CAMPUS PROCESS FOR PROTECTING HUMAN SUBJECTS

This chapter discusses a new process developed by the Berkeley campus for clearing non-DHEW funded human subject research.

TIME AND EFFORT REPORTING

SUMMARY

INTRODUCTION

UCSD payrolls over 8,000 employees each month of which one half receive all or part of their salary from contract and grant funds. These payments totaled over $20 million in 1972-73 and affected operations in more than 50 campus departments and research units.

Office of Management and Budget (OMB) Circular A-21 Rev. (reissued as Federal Management Circular (FMC) 73-8) establishes Federal contract and grant requirements for time and effort reporting.

No additional or supplementary requirements are imposed by individual funding agencies.

Annual manpower surveys required by National Institutes of Health (NIH), National Science Foundation (NSF), National Aeronautics and Space Administration (NASA) and other agencies are excluded from this analysis.

I. FEDERAL REQUIREMENTS

Allowable personal services costs must be reasonable and conform to established institutional policy consistently applied and adequately supported.

Personal services costs must be based on institutional payrolls appropriately documented.

Stipulated salary support is authorized but generally not used by the University of California.

Direct charges of academic salaries must be based upon institutional salary systems supported by:

a. adequate appointment and workload distribution system and accompanied by monthly reviews by responsible officials and a report of any significant changes, or

b. a monthly "after-the-fact" certification by departmental chairmen of the distribution of effort of individual academics.

Direct charges for salaries and wages of non-professionals must be supported by time and attendance and payroll distribution records.

The Fair Labor Standards Act of 1938 imposes positive time reporting requirements on non-exempt employees of educational institutions (80% of total staff employees).

II. UNIVERSITY OF CALIFORNIA IMPLEMENTING POLICIES AND PROCEDURES

In general, the University relies upon the payroll system and normal documentation supplemented by a monthly "after-the-fact" review of workload distribution by a responsible official for academic personnel.

Positive reporting of time and effort is required of all staff employees funded from Federal contracts and grants.

III. UNIVERSITY OF CALIFORNIA-SAN DIEGO IMPLEMENTING PROCEDURES

The University of California, San Diego policy and procedures manual sets forth the following requirements:

a. Accurate attendance records are required for all staff employees and academic employees eligible to accrue vacation/sick benefits.

b. Employees' time records are maintained for all staff employees any portion of whose salary or wage costs are charged directly to a Federal contract or grant.

c. Payroll Time Sheets and special payrolls are the mechanisms used to pay general assistance employees.

d. All payroll documents must be retained in departmental files for ten years or longer in accordance with award requirements.

IV. RELATIONSHIP OF FEDERAL TIME AND EFFORT REPORTING REQUIREMENTS AND UNIVERSITY IMPLEMENTING POLICIES AND PROCEDURES

There is a significant relationship between Federal time and effort reporting requirements, the Fair Labor Standards Act of 1938 and the University policies and procedures.

Without any requirements in Federal contracts and grants, the University would have had to develop a system of positive time recording for most staff employees and a basis for allocation of the time of academics and exempt staff employees to various contracts and grants and leave status.

The formal review and certification by the departmental chairman of the workload distribution of academics to specific projects represents an additional requirement.

The Federal contract and grant requirements reinforce the need for positive time reporting and records for payroll distribution of salary costs. These requirements apply to exempt as well as non-exempt staff employees.

V. IMPACT STUDIES OF THE FEDERAL TIME AND EFFORT REPORTING REQUIREMENTS

Individual Departmental Analyses

Eight research units and academic departments were included in the sample for the UC San Diego campus. They were:

Marine Physical Laboratory
Marine Facilities
Marine Biology Research Division
Applied Physics and Information Systems
Physics Department
Chemistry Department
Medicine Department
Radiology Department

The surveys of the sample departments revealed observance of the Federal requirements but considerable variation in detailed procedures at the departmental level and limited observance of some of the additional local campus requirements.

The Offices of Contracts and Grants, Accounting and Staff Personnel, both in the Office of the President and the campus level, were involved in policy and procedure as well as specific operating aspects of time and effort reporting. The only identifiable costs were those required in connection with internal audits by the General Accounting Division of the Accounting Office of 1/4 FTE a year at a annual cost of $4,000.

General Findings of the Impact Studies

Direct costs in individual units are nominal but when aggregated for the entire University might total $500,000. However, modification or elimination of the contract and grant requirements would not reduce the University's operating costs materially.

Delays - This requirement does not involve any significant delays in processing contracts or grants nor in the carrying out of the research effort, although it may result in some delays in payments or final close-out. These delays do not appear to be significant.

Time and Effort - Widespread time and effort is required at numerous points within the University to comply with this requirement, but within each unit the amount is nominal.

Introduction of Conflict - The time and effort reporting requirement introduces a potential element of conflict for both staff and academic employees. While the conflict is fairly low-key, it contributes to the gap between the administrative and academic-research worlds of the University.

Non-Standard Requirements - The requirements in this area are standard as set forth in OMB Circular A-21 Rev. Reference to this source in agency regulations would be helpful.

Academic Issues - In addition to the introduction of conflict issues discussed above, the requirement does involve the potential for serious academic objections due to the practical difficulties in assigning time and effort to specific activities and, more significantly, to the implications of such reporting to the professional status of the academic staff.

Record Keeping - Two aspects of record keeping merit attention: (1) the record keeping involved in time and effort reporting for staff employees is becoming increasingly burdensome and (2) the 10-year record retention requirement is costly and appears excessive.

VI. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Minor Cost Element

The direct and indirect costs of positive time reporting for staff employees and "after-the-fact" review and certification of distribution of effort of academic employees involves a minor cost for each University employee financed from these funds although the aggregate represents a substantial sum. However, these costs result as much from the University's own administrative requirements and the requirements of the Fair Labor Standards Act as from those prescribed in Federal contracts and grants. The costs would not be substantially reduced by modification or even elimination of the latter.

lime and Effort Reporting and Multiple-Source Funding

Administrative problems that result from time and effort reporting are minimal when the salaries and work effort are related to a single Federal Contract and grant. Administrative difficulties develop when Federal contract and grant activities are multi-source funded and constitute the primary sources of funds for the unit. Under these conditions the following factors tend to make the time and effort reporting requirements particularly burdensome:

-A substantial percentage, up to 30% in some instances, of the total direct charged salaries in contract research units is for technical and administrative support personnel. The efforts of these employees are not readily identifiable with individual research contracts and their salaries might appear to be appropriately funded as indirect costs.

-The University of California payroll system was not designed to accommodate the complexities of multi-funded employees within the time schedule of the system. To avoid the burdensome paperwork in the research departments and the Personnel or Accounting Offices, numerous practical accommodations in the procedures for the costing of salaries have developed.

-Federal contract and grant funding is based on a by-product or incremental cost accounting concept with Federal support shifting away from general institutional support to funding of a larger number of specific projects. Because of this trend, it is increasingly difficult for universities to adhere to specific time and effort reporting requirements for the funding of general technical and administrative type positions.

-Academic-research supervisors, while expecting a full eight hour day and forty hour work week from staff employees, place a low value on positive time reporting and regular working hours for themselves and their staff employees and often reflect this in their administrative practices.

Stipulated Salaries

The stipulated salaries alternative for academic salary payments does not appear to be subject to modifications that would make it generally acceptable to the universities as a viable alternative for present procedures. It also does not appear feasible to extend this alternative to staff employees in view of other legal requirements and management considerations.

Potential Conflict in Administrative and Academic Values

Enforcement of time and effort reporting requirements must be carefully balanced against the sensitive professional and personal issues that are involved and the basic role of research in the university's program. Unilateral development of administrative regulations and the arbitrary enforcement of their minutiae beyond the point of reality can set the stage for disregard of even reasonable requirements and lead to unnecessary confrontations. Failure of academic personnel to understand and cooperate in the achievement of reasonable controls and to recognize a public trust responsibility in the expenditure of public funds can result in equally serious political and administrative reactions. The answer lies in restraint, reasonableness, understanding and cooperation by both parties, and a mutual effort to reduce the gap in attitudes and value systems of administrative and research personnel.

Recommendations

Federal Agency

Administrative Approval of Certifications

The monthly "after-the-fact" certification requirements of OMB Circular A-21 Rev. and those of the University should be modified to provide more leeway to campus administrators to delegate authority to responsible administrative officials other than the departmental chairman or equivalent academic officials to make the certifications.

Publication of Requirements

The standard government-wide requirements that apply to all Federal contract and grant operations, such as OMB Circular A-21 Rev., should be issued in a single source document rather than reissued in duplicate wording in individual agency regulations. The Federal Procurement Regulations might well serve as this single source document. Implementation of this recommendation may be feasible under the recent reorganization of the Office of Management and Budget which placed most of the Federal assistance management programs within the General Services Administration, an agency which has a well established system of regulations. This is only one aspect of the more general problem of developing simpler and more authoritative documentation of agency requirements with an effective system of access for the many offices on campus requiring this information.

Cost Distribution of Direct Charges for Salaries and Wages

Federal requirements and the University implementing procedures should be modified, particularly with respect to multi-source funded positions, to separate the payroll and cost distribution procedures. The former could be handled through a clearing account based on daily attendance and hours of work reports. Labor cost distribution, on the other hand, could be based on one or more of the alternatives of work orders, specific hours worked (as is expected under current policies in OMB Circular A-21 Rev.), percentages of time over the reporting period, or other appropriate factors as determined by working conditions. In all cases, review and approval of cost distribution by a responsible person familiar with the work situation should be required for each pay period, and the basis for the distribution be a matter of record. Close coordination in the documentation of these two records should also be reflected in the system. This system would be particularly appropriate for administrative and technical support positions that must be financed as direct charges but whose services are not readily identifiable with a small number of individual contracts or grants. However, in the interests of uniformity, the system could be extended to all contract and grant employees.

Institutional Recommendation

Institutional Management Policy

On the basis of this study of time and effort reporting requirements and practices, including those of Federal agencies, it is apparent that the management and faculty of educational institutions should give increased attention to this area of operations. Potentially serious problems are being identified as a result of deficiencies in the basic documentation of time and effort of both academic and staff personnel and in the systems used to distribute and verify these costs on a realistic basis. These areas do represent complex administrative issues particularly

where research is funded from multiple sources and integrated with teaching and public service programs. Further complications flow from the apathy or even negative attitudes of the university personnel directly involved. The acceptance of Federal contract and grant funds involves a commitment of time and effort and its systematic reporting, distribution and verification. The institution must reflect this commitment in its planning and systems operations to a degree that may well represent a substantial departure from the traditional university operating style or value system on administrative matters.

University of California Recommendations

Changes in University of California Regulations

The following recommendations are directed at improving University of California implementation of time and effort reporting requirements:

- The new payroll procedures currently being developed should reflect the need to charge salaries and wages to a number of different fund accounts for individual employees on a frequently changing basis without extensive personnel actions, paperwork or payroll corrections.

- Requirements for retention of payroll support documents and certifications of academic listings should be reduced from 10 years to 5 years, unless a longer time is set forth in the agency award requirements. This change would make the retention requirement consistent with other University records retention periods. It would also result in substantial savings in record retention costs.

- The Offices of Accounting and Staff Personnel should be closely coordinated in training, audit programs, and the issuance of instructions involving time and effort reporting, payroll and personnel policies.

- The detailed instructions for time and effort reporting and related payroll procedures at the departmental level should be standardized campus-wide with authorized alternative procedures for those situations involving multi-funded positions, personnel at sea, personnel at remote locations, or other unusual conditions. These instructions should be developed in close cooperation with representatives of the academic departments and should be implemented through a campus-wide training effort.

- The UC San Diego campus requirement that deviations from the work schedule, i.e., reporting late for work, be reported as tardiness and makeup time should be eliminated as long as the employee works eight hours each day and forty hours each week.

- In those instances where the time of employees is charged to individual contracts and grants on the basis of approximations made by reasonable methods as authorized by the OMB Circular, the basis for the approximation should be a matter of record in the department and updated or verified as to its validity each month.

- The payroll listings used to support the after-the-fact certifications of the distribution of effort of individual academics should also include data on effort of individual staff employees charged to that contract or grant to provide a full picture of salary and wage charges.

APPENDICES

APPENDIX A

Impact Elements and Selected Agencies

Impact Elements: The following are those areas of potential impact used by the RMIP staff in analyzing each of the Federal requirement areas.

Benefits: Benefits which may accrue to the University in implementing a Federal requirement.

Cost: Identifiable dollar costs of achieving requirements fulfillment by various University units and/or individuals responsible for compliance.

Delays: Delay, for example, in the research effort due to the need for obtaining clearances required by various agencies (and within the University to the extent that the process is caused by an agency requirement); delay in payments for reimbursement of University working capital used to fund contract and grant activity; delay in the processing of documents.

Introduction of: Conflict Policies, procedures and requirements introduced into the University's environment which are divergent from the normal mode of University operations and which may cause turbulence either between elements of the University or between the University and an outside agency. Academic issues are also examined in this category.

Non-Standard Requirements Variations among the requirements of Federal agencies in the same area, such as reporting, recording properly or obtaining prior approvals.

Record Keeping: Requirements for a variety of records, such as detail of records to be kept, manner of recording and time limitations.

Time and Effort: Time of campus personnel in carrying out a requirement, for example, meetings of campus Human Subjects Committee, time to prepare proposals, or time to prepare detailed progress reports of projects.

Impact Elements and Selected Agencies

Agencies: The following Federal sponsoring agencies are included in the impact studies:

(1) Atomic Energy Commission*

(2) Environmental Protection Agency

(3) National Aeronautics and Space Administration

(4) National Institute of Education

(5) National Institutes of Health

(6) National Oceanic and Atmospheric Administration

(7) National Science Foundation

(8) Office of Naval Research

(9) United States Air Force

*On February 6, 1975 the Atomic Energy Commission became the Energy Resource and Development Agency. For purposes of this report, Federal requirements pertaining to the AEC and discussed in the impact studies will be those in effect before the above changeover date.

APPENDIX B

Description of Major Federal Requirement Areas

The following is a description of the major Federal requirement areas considered for study by the RMIP staff. Nine areas (indicated by an asterisk) were selected for in-depth study. The studies provide an analysis of the impact certain Federal requirements impose on an institution as a result of accepting Federal contracts and grants.

Federal Requirement Areas:

Affirmative Action: Actions which must be taken to achieve the goals of the Federal Equal Employment Opportunity program, include: 1) recordkeeping; 2) determination of patterns; 3) goal setting; 4) recruitment of minorities and women; 5) special training; 6) affirmative action commimttee operations; 7) special staff, such as coordinators; 8) continuing review and reporting to management on goal achievement.

*Cash Flow: Maintaining the cash flow for Federally funded projects, which lincludes letters of credit, advance by Treasury check, or reimbursement by Treasury check.

Consultants: Procedures which must be followed in the utilization of both internal and external consultant funded by research project sources include: 1) assuring compliance with agency restrictions on use of internal consultants; 2) justification in proposals for use of particular persons selected as consultants and amounts of fees; 3) procedures to comply with agency requirements posts; 5) determination of whether specific arrangement should be treated as a consulting contract or employee status.

*Cost Recovery: Procedures necessary to document and demonstrate direct and indirect costs rising under Federal projects so as to recover costs for the institution. The procedures include: 1) accumulation of data, development of proposal and negotiation of indirect cost rates: 2) accumulation of data, development of proposal and negotiation of computer rates; 3) application of indirect cost rates; 4) impact of the CASB; 5) negotiation of Patient Care Cst Recovery Rates.

Cost Sharing: Actions which must be taken to comply with policies requiring institutions to contribute a certain portion of project costs. Those actions include: 1) setting methods for making the contribution, either through salaries of faculty or by foregoing indirect costs; 2) maintenance of records required to establish sharing; 3) negotiation of agreements with agencies, either institutional or individual; 4) audit of evidence of compliance; 5) preparation of final reports.

Environmental Impact: Actions taken to meet Federal and State Legislation requiring environmental impact studies concerning land use planning prior to construction. The actions include the preparation and processing of environmental impact studies and reports.

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Description of Major Federal Requirement Areas

*Financial Management: Budgeting, accounting and determination of allowable costs. These actions encompass: 1) expenditure limitations; 2) submission of financial reports; 3) rebudgeting, including program and budget deviations; 4) record keeping; 5) close-out of project.

*Health and Safety: Procedures to assure a healthful and safe environment in areas under campus jurisdiction for students, faculty, staff and the general public, and to minimize loss of people power, facilities and money. The area encompasses: 1) OSHA requirements; 2) radiation and biological hazards; 3) waste disposal; 4) air and water pollution; 5) equipment safety; 6) fire and explosion safety.

*Human Subjects Protection: The process of assuring the protection of human beings at risk in research projects including physical, social and psychological risks. The process includes: 1) review of proposals for human subject utilization; 2) writing protocol; 3) operations of the Human Subjects Committee including study of protocols, review and approval of protocols, record keeping, educating and consulting with the campus, continuing review of project operations, principal investigator's adherence to required standards; 4) use of Consent Forms by the principal investigator and audits by Committee.

Inventions and Patents: Resolution of the interests of the researcher, institution, agency and public in inventions and patents resulting from the research. The area encompasses: 1) negotiations of conflict between institutional and agency policies; 2) entering into patent agreements with Federal sponsors; 3) complying with agency requirements for disclosure statements; 4) making agreements concerning division of royalties; 5) development of institutional policy; 6) interim and close-out reports.

Laboratory Animals, Care of: Observance of requirements for the health and care of animals used in research projects. The area encompasses: 1) provision of proper facilities as required by law; 2) animal care and use committee operations; 3) maintaining and obtaining accreditation; 4) campus surveillance of animal activities and compliance surveys; 5) individual certification of projects; 6) arrangements for services of veterinarians.

Narcotics and Dangerous Drugs: Actions required in acquisition, handling, storage, issue, use and dispensing of narcotics and dangerous drugs for research purposes in order to comply with laws and regulations. Those actions include: 1) obtaining required licenses and approvals for individual research projects; 2) maintenance of a control system at the institution; 3) cross-reference to "Human Subjects"; including any special protocols or reports required; 4) clearance by State Clearing House (peculiar to California).

*Procurement: Those procedures involved in acquiring personal and real property and services other than permanent payroll staff, including procurement of outside consultants. The area includes: 1) vendor equal opportunity; 2) screening property; 3) agency prior approval; 4) use of GSA; 5) obtaining excess property; 6) record keeping; 7) payment of State sales tax; 8) subcontract administration.

APPENDIX B (cont'd)

Description of Major Federal Requirement Areas

*Property Management: Actions to maintain, control, account for, report status on and dispose of property furnished by government funds include: 1) inventorying; 2) maintenance; 3) record keeping; 4) reporting to agency; 5) restricted use; 6) title transfer; 7) disposition; 8) close-out of project; 9) transfer of property to another institution.

*Proposal Preparation, Negotiation and Award: Drafting and developing documents; institutional review, approval and submission; revisions; negotiation with agency and acceptance and execution of award. The area encompasses the following: 1) work of the principal investigator; 2) pre-proposal contact with the agency; 3) assistance of campus contract and grant office; 4) institutional levels of review; 5) assessment of applicability of agency terms and conditions; 6) review of legal form; 7) resources analysis/cost sharing; 8) other institutional requirements peculiar to California, such as State Clearing House, State Fire Marshal, Drugs, etc..

Rights in Data: Resolution of the interests of the researcher, institution, agency and public in the data of knowledge developed in the research. The area includes: 1) negotiation of conflict between agency and institutional policies; 2) compliance with research agreement terms; 3) development and administration of institutional policy, including involvement of the faculty and administration; 4) resolution of problems concerning sponsor restrictions on publication data; 5) negotiating and carrying out of publication agreements; 6) disposition of data and close-out project.

Technical Reports: Actions to provide the sponsoring agency with the substantive findings of the research project. The contracting institution reports, which might also include journal publications. The reports may be submitted in writing, film or tape. The researcher participants in the negotiations between the agency and the University involving the reporting requirements.

*Time and Efforting Reporting: Policies and procedures for complying with Federal contract and grant requirements to document and support direct charges for salaries and wages of academic and staff employees. The area encompasses: 1) time and attendance records and procedures for staff personnel; 2) entering of time and attendance data onto the payroll time sheets and processes; 3) adjustments in employment forms, payrolls and fund accounts to which payroll is charged on the basis of time and effort reports; 4) time and attendance records of academic personnel; 5) certification of payroll listings for academic employees; 6) audits of time and attendance reports, payroll records, and certification for academic employees.

Travel Approval: The process of complying with restrictions on travel funded from research project sources includes the following: 1) describing and budgeting travel in proposal; 2) obtaining special approval for foreign travel; 3) maintenance of institutional arrangements to assure compliance with contract and grant terms; 4) obtaining special approval for certain types of travel, e.g., meetings; 5) making reports of travel performed.